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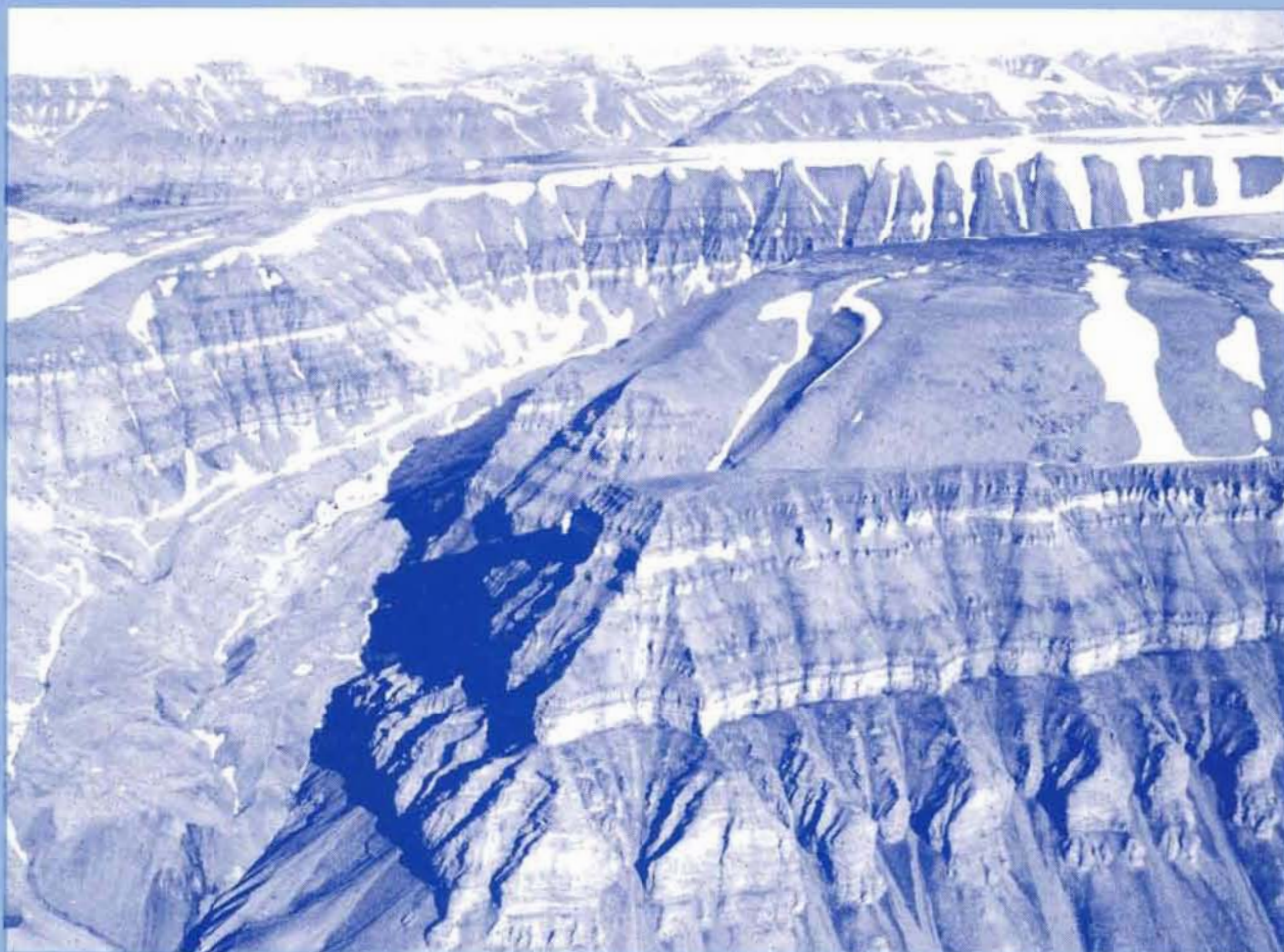
STRATIGRAPHICAL DICTIONARY FOR SVALBARD

Editors: W.K. Dallmann & A. Mørk

translation from the Russian title:

STRATIGRAFIČESKIJ SLOVAR' ŠPICBERGENA

Editors: I.S. Gramberg, A.A. Krasil'sčikov & D.V. Semevskij





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EDITOR'S PREFACE

by W.K. Dallmann (chairman of the Committee on the Stratigraphy of Svalbard, SKS)

The diversity of stratigraphical names defined for rock units in Svalbard by scientists from many nations has resulted in a difficult situation, where different stratigraphical schemes are used by different authors. The different schemes are established on the basis of data of variable quality, and the formal or informal status of stratigraphical names is not always clear. In 1990, the Committee on the Stratigraphy of Svalbard (SKS, a subcommittee of the Norwegian Committee on Stratigraphy) was founded to elaborate a unified nomenclature. The present dictionary is of great value to the committee's work as it provides an almost complete overview of stratigraphical names published up to 1988, with short explanations and references to definitions given in previously published literature. Furthermore, the dictionary will be of great value to the numerous geologists working on and studying Svalbard, as well as facilitate the reading of scientific work from other geological "schools" or nations. Our decision to publish a translation of the dictionary from Russian to English is not meant to replace a unified stratigraphical nomenclature of Svalbard which is presently being elaborated by SKS in collaboration with the authors of the original Russian dictionary.

Editorial and technical remarks for the use of the translation:

1. The system of the International Standard Organization (ISO) is used for the transcription of Russian references and terms.
2. This dictionary is meant to explain stratigraphical terms as they are used in the literature up to 1988. It does not recommend whether or not the individual units should be used according to Norwegian or international nomenclature rules and recommendations.
3. The use of unit ranks for stratigraphical units (group, formation, etc.) has different traditions in Russian and English literature. This has especially been a problem for translation in Part I, which deals with the less well-established basement stratigraphy. Consequently, for the key words we have used the unit rank that is applied in the referred literature. Stratigraphical units defined in Russian thus appear with their ranks in the Russian language and are indicated with quotation marks ("serija", "svita", etc.). The rank(s) used in the second language, or other commonly or historically used unit ranks, are indicated in brackets. In Part II, which deals with the sedimentary platform strata, Russian and English unit ranks generally correspond.
4. The spelling of the locality part of the key words has been adjusted with regard to the present, official spelling used on Norsk Polarinstitutt's modern maps or given in "Place names of Svalbard" (Norsk Polarinst. Skrifter Nr. 80/112). Wherever this spelling differs from the spelling in the referred geological literature, the added characters or words are indicated in brackets, e.g. ALKHORN(ET) FORMATION, unless the difference is explained in the text or a footnote.
5. Main references given below the key words are in chronological order. In Part I, the indicated age of stratigraphical units does not always refer to the first reference; in these cases, the corresponding age and reference are marked with an asterisk (*).
6. We are aware that Russian geological literature partly has a different tradition in using references. For this translation, we have followed the formal manner of writing references used in the English literature, but we have not changed the manner of referring within the explanatory texts.
7. The responsible author(s) for the explanations are indicated at the end of the individual explanatory texts. Wherever the authors have made changes from the original Russian edition, this is marked by a footnote.
8. Tables 3a and 6a (Part II) have been added by request of the present editors for reasons of reference to original authors.
9. The abbreviations E., M., and Lt. for the age of the stratigraphical units mean "Early", "Middle", and "Late".
10. As the first part of the key words normally consists of a Norwegian place name, the key words have been arranged according to the Norwegian alphabet, with Æ, Ø and Å at the end.
11. A more thorough linguistic revision of the translation would have delayed publication considerably; we have therefore decided to publish the translation despite the presence of minor defects of syntax and style, which hopefully are insignificant for the scientific content.

**STRATIGRAPHICAL DICTIONARY
FOR
SVALBARD**

Editors:
I.S. Gramberg, A.A. Krasil'sčikov & D.V. Semevskij

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PREFACE

The intensive studies of the geology of Svalbard during the last decades have resulted in a large amount of data associated with all branches of geological sciences and, particularly, with stratigraphy. There is no other Arctic region where a complicated structure exposes almost all geological systems, Proterozoic through Quaternary, within a limited area (c. 70,000 km²).

The variety of geological formations and their excellent exposures, in combination with Svalbard's geotectonic key position and its dissent law status, attract numerous explorers from different countries to the archipelago. Diverse scientific schools and methodological approaches with regard to stratification of successions have created a number of local stratigraphical schemes which often are quite contradictory or duplicate. Manifold subdivisions (beds, members, formations, etc.) have frequently been given proper names without meeting the established principles of stratigraphical nomenclature. Also, the numerous explorers investigating different regions of the archipelago have not always referred to their colleagues' working results, so much the more as those results have been published in different languages and in various journals. In this way, more than 1000 names with relevance for the stratigraphical subdivision of Svalbard have been given. The creation of this stratigraphical dictionary was a necessary step towards a systematization of Svalbard's stratigraphical nomenclature.

The dictionary consists of two independent parts, approximately equal in volume, and reflects the specific character of the distinct two-stage geological history of the archipelago. The first part comprises stratigraphical subdivisions of Proterozoic through Silurian age, forming parts of the folded basement. The second part deals with the sedimentary cover from Devonian through Quaternary deposits. For each stratigraphical subdivision the following are indicated: age, reference to primary sources, synonyms, occurrence, brief lithological description, thickness, fossils, relations to under- and overlying units.

The dictionary is intended for readers engaged in different aspects of the geology of Svalbard, as well as for scientists working on general and regional stratigraphical problems.

PART I

PRECAMBRIAN - LOWER PALEOZOIC
(Cambrian, Ordovician, Lower Silurian ?)

INTRODUCTION

Part I comprises lithostratigraphical subdivisions of the folded basement of the Svalbard archipelago of Precambrian to Early Paleozoic (Cambrian - Ordovician) age.

Basement rocks are exposed in the northern part of the archipelago and along the western coast. The folded basement of Svalbard has traditionally been considered to have acquired its final form as a result of the Caledonian Orogeny. Radiometric age determinations of the initial stages of the Caledonian metamorphism correspond approximately to the Ordovician/Silurian boundary (440 ± 15 my.). The pre-Devonian deposits of Svalbard assigned to the basement have until recently been considered as one sedimentary-metamorphic complex, the "Hecla Hoek Formation" (Harland 1959, and others). However, comprehensive new data point to a long and complicated Precambrian history of Svalbard, as well as to essential differences in the structure of the folded basement of different regions of the archipelago. Four main regions of different types of basement successions and tectonic settings have been distinguished: Nordaustlandet, northeastern Spitsbergen (Ny Friesland peninsula), northwestern Spitsbergen, and the western coast of Spitsbergen.

A brief characterization of the main lithostratigraphical complexes of the folded basement is presented below.

The crystalline complexes of the **Early Precambrian** are characterized by the prevalence of garnet-biotite, high-alumina gneisses and plagiogneisses. Migmatized plagiogneisses with eclogite bodies and calciphyres in northwestern Spitsbergen (Solanderfjellet or Richarddalen Group) and the poorly studied granitic gneiss complex of Nordaustlandet have tentatively been assigned to the Lower Proterozoic.

The Lower Proterozoic comprises the relatively highly metamorphosed successions of Spitsbergen represented by the Atomfjella (Ny Friesland) and Smeerenburgfjorden (northwestern Spitsbergen) Groups. Mica and garnet-mica plagiogneisses predominate, while subordinate carbonate rocks (marbles and calciphyres) and quartzites occur, providing the base for their stratigraphical subdivision. The appearance of high-alumina gneisses and crystalline schists is characteristic of the northwestern region. The bulk of these rocks have undoubtedly a metasedimentary origin, but there are no direct data on the age of the primary sediments.

The Lower Proterozoic crystalline complex is everywhere on Svalbard separated from the well-known Upper Proterozoic (Middle to Upper Riphean) deposits by thick sedimentary-volcanic successions, mainly metamorphosed in greenschist facies. These transitional successions most probably introduce the Late Precambrian (Riphean) geosynclinal cycle. They

are separated from the older crystalline basement by a structural unconformity. However, this primary unconformity was transferred into a new, Caledonian infrastructure, the surface of which is represented as the transition from amphibolite to greenschist facies progressive metamorphism within the schistose successions. The age of these successions has preliminarily been suggested to be Early Riphean, though the possibility of a higher age (Middle Proterozoic, up to 1650 my.) cannot be ruled out.

This succession includes the Mossel(bukta) (Ny Friesland peninsula), Krossfjorden and Kongsvegen (northwestern Spitsbergen) and the Isbjørnhamna (southwestern coast of Spitsbergen) Groups. The bulk of these groups consists of mica- and garnet-mica schists. In the middle part, marble and calciphyre successions play a significant role in most areas. Quartzites are present throughout the succession. The thickness of these groups varies within large limits, from 1500 m in southwestern Spitsbergen (Isbjørnhamna) to 330 m in the northeast (Mosselbukta) and 4500 m in the northwest (Krossfjorden). The volcanogenic Kapp Hansteen Formation of Nordaustlandet and the Werenskioldbreen Group of the western coast of Spitsbergen are stratigraphical equivalents of the Lower Riphean (?) schistose successions. Both are metamorphosed in greenschist facies and are situated below Middle to Upper Riphean deposits with microphytolites and stromatolites.

The **Middle to Upper Riphean** complex is developed most completely on the Ny Friesland peninsula (Lomfjorden Supergroup) and in the western part of Nordaustlandet (Murchison Bay Series). Both successions have been deposited in a common geosynclinal basin (Hinlopenstretet) and are characterized by a transgressive stratigraphical sequence from mainly quartzose sandstones through silty-argillaceous and argillaceous-carbonate sediments to limestones and dolomites. The total thickness of these similar successions varies from 4000 to 5000 m in Nordaustlandet (Flood et al. 1969, Krasil'shchikov 1973) to 6000 to 7000 m on the Ny Friesland peninsula (Harland 1959, Harland et al. 1966). Both these thick successions are lithologically subdivided into two parts: a lower essentially terrigenous (3100 to 4500 m) and an upper carbonate part (1100 to 2500 m). The upper part is characterized by stromatolites and microphytolites and is of Late Riphean age (Krasil'shchikov et al. 1965, Raaben & Zabrodin 1969), the lower part includes deposits of early and middle parts of the Late Riphean (Raaben & Zabrodin 1969, Krasil'shchikov 1970).

On the western coast of Spitsbergen, where the entire Upper Proterozoic succession has an essentially different structure (Krasil'shchikov 1973, 1976, Harland 1960, and others), the flyschoid carbonate successions (Sofiebogen Group and equivalents), which generally are characterized by microphytolites, are assigned to undifferentiated Middle and Late Riphean age.

Unlike the eastern type of successions, the Middle to Upper Riphean complex of the western coast zone is dominated by terrigenous deposits. The structure and thickness of the individual successions changes noticeably along the strike of the zone.

The **Vendian** complex comprises the Gotia(halvøya) Group of Nordaustlandet and the Polarisbreen Series of Ny Friesland, as well as the clastic-carbonaceous Bellsund Group of the western coast of Spitsbergen. A Vendian age of these deposits has been assumed on the basis of their position beneath Cambrian deposits dated by fossil fauna. For eastern Svalbard, this age has been corroborated by microphytolites typical for the Vendian of the Urals and Siberia

(Krasil'shchikov et al. 1965, Raaben & Zabrodin 1969), and for the western regions by microfossils which according to Mihajlova (1985) and Il'chenko (1986) also are of Vendian age.

A characteristic feature of the Vendian complex of the eastern regions are the mainly terrigenous, fine-grained composition of the rocks and the occurrence of specific ("tillitic") layers in the middle part of the succession with a thickness of 50 to 250 m, containing coarse detrital material (Sveanor and Wilsonbreen Formations). The thickness of the entire complex is 500 to 700 m.

The 300-800 m thick, clastic-carbonaceous Bellsund Group comprises all the metamorphic conglomerate successions of the western coast, which do not have significant differences as petrographical studies have shown. Stratigraphical relations between earlier, macroscopically made subdivisions are not always clear. The general character of the succession changes from essentially quartzitic (rarely polymict) conglomerates of the Slyngfjellet type through clastic carbonate rocks and schists with a variable quantity of boulders to the mainly dolomitic Kapp Lyell type conglomerates. The latter frequently lie with a wash-out contact on different levels of the underlying strata. Recently, layers of black argillaceous carbonate and green, sericite-chloritic schist have been found within the conglomerate succession.

The upper part of the Caledonian folded basement of the archipelago is represented by a **Lower Paleozoic** complex which consists mainly of Cambrian and Ordovician carbonate deposits. These are the Kapp Sparre Formation on Nordaustlandet (Cambrian), the Tokammane Formation (Cambrian) and the Kirtonryggen and Valhallfonna formations (Lower to Middle? Ordovician), collected within the Oslobreen Group in Ny Friesland. In southern Spitsbergen two groups have been distinguished: the Sofiekammen and Sørkapp Land groups, respectively of Cambrian and Ordovician age. In the central part of the western coast of Spitsbergen, a calcareous conglomerate succession with a Middle to Late Ordovician and Silurian fauna has been recognized, the Bulltinden Formation.

The thickness of the Cambrian deposits significantly increases from east to west, from 200 to 1000 m. The preserved thickness of the Ordovician part is approximately constant, 1200 to 1400 m. The younger Bulltinden Formation is characterized by strong fluctuations in thickness from 60 to 330 m, and up to 4000 m within a minor area.

The base of the Cambrian deposits is marked by a relatively thin, but persistent, horizon of quartzose sandstones which has been recognized on Nordaustlandet (lower part of Kapp Sparre Formation), on the Ny Friesland peninsula (lower part of Tokammane Formation), and locally in southern Spitsbergen (at the base of the Sofiekammen Group). The persistence of this horizon, its almost monomineralic quartzitic composition, and the sharp lithological boundary with the underlying carbonate-argillaceous deposits suggest a hiatus covering a considerable area.

As mentioned in the preface, a large number of local stratigraphical schemes exist for the different regions of Svalbard, and these can often be contradictory and not easily comparable. For the convenience of the use of the dictionary these schemes are summarized in Tables 1-9, while Table 10 shows a composite scheme of stratigraphical subdivision of the basement of Svalbard as proposed by the authors.

Kulling 1934; Sandford 1950		Flood et al. 1969; Hjelle & Lauritzen 1982		Krasl's Ščikov 1970, 1973, 1976	
Formation	Series	Age	Supergroup	Group	Formation
Kapp Sparre		Cambrian	Hinlopen- stretet		Kapp Sparre
Eocambrian	Sveanor	Vendian			Sveanor
Precambrian	Murchison Bay	Late Riphean	Murchison- fjorden	Roald- toppen	Ryssø Hunneberg (et) Raudstup(et) - Sälodden Nordvik (a) Flora
				Celsius- berget	
				Franklin- sundet	Kapp Iord Westmanbukta Persberget
	Kapp Hansteen		Paragneiss	Botnla - (halvøya)	Austfonna Kapp Platen Brennevinnsfjorden Kapp Hansteen

TABLE 2
Ny Friesland
(Lower - Middle? Proterozoic)

Harland & Wilson 1956***				Abakumov 1965			Group	Age
Age	Group	Series	Formation	Member	Svita	Seri ja		
L a t e	Lower	Planet- fjella				Planet- fjella	Lower	L a t e
P r e c a m b r i a n	Hecla	Harker breen	Tordenryggen	Sørbreen	Tordenryggen	Harker- breen	Hecla	P r o t e r o z o i c
			Bleikfjellet	Cambridgebreen Gneisses Camryggen Gneisses Austfjorden Gneisses	Bleikfjellet Camryggen			
	Hoek	Finnland- veggen	Smutsbreen		Størmerfjellet	Finnland- veggen	Hoek	P r o t e r o z o i c
			Eskolabreen		Malmgrenfjellet			
					Smutsdalen Austfjorden	Aust- fjorden		

Table 2 continued

Harland et al. 1966			Krasil'shchikov 1973**; Harland et al. 1966*		Krasil'shchikov 1973	
Age	Super-group	Group	Formation * Svita **	Member * Tolšča **	Seriya	Age
Late	Stubbened	Planet-fjella	Vildadalalen Flåen	Rosenfjella Albreen Alryggen Tåbreen	Mosel	Middle?
		Harker-breen	Sørbreen Vassfarel Bangenhuk (en) Rittervatnet Polhem (Harkerbreen ***)	Fennilsjøen Flatøyrdalen	Atomfjella	Early
Precambrian	Dorrfbreen	Finnland-veggen	Smutsbreen Eskolabreen	Westbyfjellet Bohrryggen Einsteinfjellet Lemstrømfjellet Malmgrenfjellet Sederholmfjellet		

P r o t e r o z o i c

TABLE 3
Ny Friesland (Middle to Upper Riphean)

Harland & Wilson 1956; Wilson 1958, 1961			Harland et al. 1966; Krasil'ščikov 1973*			Krasil'ščikov 1973				
Group	Series	Formation	Age	Super-group	Group	Formation Svita *	Member Podsvita *	Pod-serija	Seri ja	Age
M i d d l e	U p p e r	Backlundtoppen Dolomites	L a t e	L o m f j o r d e n	A k k a d e m i k e r b r e e n	Backlundtoppen	Upper Dolomites	A k k a d e m i k e r b r e e n	L o m f j o r d e n	L a t e
		Backlundtoppen Oolites					Middle Dolomites			
		Draken Conglomerates				Draken	Lower Dolomites			
		Svanbergfjellet Beds				Svanbergfjellet	Oolitic Dolomites			
H e c c l a	G r u s d i e v - b r e e n	Upper Limestones	P r e c a m b r i a n	V e t e r a n e n	V e t e r a n e n	Grusdievbreem	Upper Lower	V e t e r a n e n	M i d d l e	R i p h e a n
		Fulmarberget Shales					Enpliggen			
		Glasgowbreem Greywackes					Upper Greywackes			
		Cavendishryggen Quartzites					Upper Quartzites			
H o w e k	M i d d l e	Upper Veteranen	V e t e r a n e n	V e t e r a n e n	V e t e r a n e n	Kortbreem	Lower Greywackes	V e t e r a n e n	L a t e	L a t e
		Middle Veteranen					Lower Greywackes			
		Lower Veteranen					Lower Quartzites			
		Cavendishryggen Quartzites					Quartzites			

TABLE 4
Ny Friesland (Vendian to Lower Paleozoic)

Harland & Wilson 1956; Gobbett & Wilson 1960; Wilson & Harland 1964				Harland et al. 1966***; Fortey & Bruton 1973**				Krasil'šikov 1973*	
Group	Series	Formation	Age	Super-group	Group	Formation Svita *	Member Podsvita *	Seriĭa	Age
U p p e r	O s l o b r e e n	Upper Oslobreen Limestones	Early	H i n o p e n s t r e e t	O s l o b r e e n	Valhallfonna **	Profilbekken ** Olenidsletta **	O s l o b r e e n	E.-M. O r d o v i c i a n
		Middle Oslobreen Limestones	Middle			Nordporten ** Middle Limestones ***			
		Kirtonryggen Dolomites	Early			Kirton-ryggen	Basisletta ** Dolomites ***		
		Lower Oslobreen Limestones					Spora ** L.Limestones ***		
H e c l a		Oslobreen Dolomites	Cambrian			Tokammene ***	U.Dolomites L.Dolomites		Cambrian
		Oslobreen Sandstones				Sandstones			
H o e k	P o l a r i s b r e e n	Upper Polaris-breen Shales	E o c a m b r i a n		P o l a r i s b r e e n	Dracoisen		P o l a r i s b r e e n	V e n d i a n
		Polarisbreen Tillites				Wilson-breen			
		Lower Polaris-breen Shales				Ellobreen			

TABLE 5
Northwestern Spitsbergen

Harland 1960; Harland et al. 1966		Gee & Hjelle 1966***; Krasil'shchikov 1973**; Abakumov 1976*			Hjelle & Lauritzen 1982 (after Gee & Hjelle 1966)		
Age	Member	Svita */** Formation ***	Series	Age	Formation	Age	
P r o t e r o z o i c	Biskayerhuken Pelites Montblanc Schists	Generalfjella Signehamna Nissenfjella	Krossfjorden	L a t e ?	Liefdefjorden Biskayerhuken Montblanc	L a t e	
	Liefdefjorden Marbles and Schists Bockfjorden Gneisses	Kollerbreen * Waggonwaybreen *	Smeerenburg- fjorden	E a r l y	Richardalen Group	R i p h e a n	
		Magdalenefjorden Gneisses		Solanderfjellet			E a r l y

TABLE 6
Central western coast of Spitsbergen
(Prins Karls Forland, Oscar II Land)

Harland et al. 1979				Hjelle et al. 1979; Hjelle & Lauritzen 1982		
Prins Karls Forland		Oscar II Land		General scheme		
Group	Formation	Formation	Group	Formation	Group	Age
Grampian (Silurian ?)	Geddesflya Fuglehuken Barents (with Sutor Member) Conqueror Utnes	Holmeslett- fjella (with Bulltinden Member) Motalafjella	Bullbreen (U.Ordovician- L.Silurian)	Bulltinden	Upper	S i l u r i a n - O r d o v i c i a n
Scotia (Ordovician?)	Roysna Kaggen Baklia	Sarsøyra	?		Hecla	
Peachflya (Cambrian - L. Ordovician?)	Knivodden Hornnes Alascair- hornet Fisher- laguna				Hoek	
Geikie (Cambrian?)	Rossbukta Gordon					
Ferrier (Vendian?)	Neukpiggen Peterbukta Hardie- fjellet Isachsen	Engelskbukta Annabreen Haaken	Comfortless- breen (Vendian)	Tillitic Conglomerate		Varan- gian
	Pinkle	Alkhorn(et) Løvliebreen Moefjellet Trondheim- fjella	St. Jonsfjorden (M.-U.Riphean)	Calc-argillo- volcanic Quartzite- shale Quartzite- sandstone	Middle Hecla Hoek	L a t e R i p h e a n
		Nielsen- fjellet Müllerneset Steenfjellet Bogegga	Kongsvegen (M.Riphean)	Black Shale	Lower? Hecla	
		Vestgöta- breen	?	Vestgötabreen Crystalline shale and gneiss	Hecla Hoek	

TABLE 7
Central western coast of Spitsbergen
(Nordenskiöld Land, northern Wedel Jarlsberg Land)

Hjelle 1962, 1969	Harland 1978	Krasil'shnikov & Kovaleva 1976		
Unit, Formation	Unit	Division	Svita	Seriya
Lågneset Bellsund-Dunderdalen	Lågnesbukta Millarodden Kapp Lyell	Lyellstranda Renardbreen	Kapp Linne Kapp Lyell Slyngfjellet	Bellsund
Lågneset- Kapp Martin } Lågnesrabbane } Kapp Martin }	Chamberlindalen	Asbestodden	Höferpynten Gåshamna	Sofiebogen
	Solhøgda		Dunderbukta	Werenskiöld- breen
	Konglomerat- fjellet	Gaimardtoppen Foldnutane	Vimsodden	
	Magnethøgda		Skålfjellet	Riphean

TABLE 8
South Spitsbergen (Proterozoic)

Major & Winsnes 1955		Birkenmajer 1958, 1959, 1972**, 1975*; Birkenmajer & Narebski 1960		
Age	Series	Member	Series, Formation *	Formation, Group *
Eocam- brian	Gåshamna		Gåshamna	Sofiebogen
	Höferpynten	Dunøyane Wurmbrandegga Andvika Fannytoppen	Höferpynten	
			Slyngfjellet	
Late Prote- rozoic			Bergskardet Bergnova Tonedalen	Deilegga
		Elveflya Nottingham- bukta	Subgroups ** Vimsodden	Eimfjellet
			Brattegga Angellfjellet Gangpasset Torbjørnsen- fjellet	Isbjørnhamna
			Steinvikskardet Gulliksenfjellet	
			Revdalen Ariekammen Skoddefjellet	

T o r e l l b r e e n s - g r o u p

TABLE 9

Major & Winsnes 1955			Birkenmajer 1959*; Krasil'shtikov 1973**		Birkenmajer 1975, 1978a,b			
Age	Series	Series *, Tolšča **	Formation * Svita **	Supergroup Group	Formation	Member		
E.-M. Ordovician	Arkfjellet Sjdanovfjellet	Arkfjellet Sjdanovfjellet Tsjebysovfjellet Rasstupet Nigerbreen Dusken Luciapynnten Wiedorfjellet	Sørkapp Land	Sørkapp Land	Hornsundtind	Tsjebysovfjellet Rasstupet		
	Gorkåkk Illalen						Nigerbreen Dusken Luciapynnten	
	Glenn						Wiedorfjellet	Goesbreen Paierlbreen
Cambrian	Slakli	Nørdstetinden Gnålberget Slakli	Sofiekammen	Sofiekammen	Nørdstetinden	Nørdstebreen Hansbreen		
					Gnålberget Slaklidalen			
					Vardepiggen	Fløgtoppene Midfjellet Olenellusbreen		
Permian		Blåstertoppen			Blåstertoppen	Russepasset Flakfjellet Gåsbreen		

TABLE 10
Stratigraphic subdivision of the folded basement

Age		Western coast of Spitzbergen	Northwestern Spitzbergen	Ny Friesland	Nordaustlandet	
Paleozoic	Silurian	Halltinden (up to 1000 m)				
	Ordovician	Sørkapp Land (1400 m)				
		Soflekammen (1000 m)		Oslobreen (1200-1400 m)	Valhailfonna (250 m)	
	Cambrian				Kiltohyggen (750-960 m)	
Late Proterozoic					Tokamane (200 m)	
						Kapp Sparre (200 m)
	Vendian	Bellsund (300-800 m)		Polarisbreen (500-700 m)	Willsonbreen (100-250 m)	Sveanor (50-130 m)
	Late Riphean	Soflebogen		Lomfjorden	Akademikerbreen (up to 2500 m)	Upper (1100-1500 m)
					Veteranen (up to 4500 m)	Lower (3100-3700 m)
	Middle Riphean	Gashamna (1200-2500 m)				
		Werenskoldbreen (2000 m)				
	Early Riphean	Isbjørnhamna (>1500 m)	Krossfjorden (Kongsfjorden) (4500 m)	Mosel	Vilddalen (1800 m)	Upper (2000 m)
	1900-1650 Ma				Flåen (1500 m)	Lower (4000-5000 m)
Archaean - E. Proterozoic			Smeerenburgfjorden	Atomfjella		
	>1900 Ma					
			Richarddalen/Solanderfj.		Granitic Gneiss Complex	

A

AKADEMIKARBREEN GROUP ("PODSERJA")

*Lt. Riphean

(Harland et al. 1966, Krasil'shikov 1973*)

Named from a glacier in western Olav V Land.

Mountain massif between Olav V Land and southern Ny Friesland Peninsula. This is the upper, essentially carbonate part of the Lomfjorden Series. It lies conformably over dolomitic shales of the Oxfordbreen Formation, Veteranen Group, and is overlain by silicious shales of the Vendian Polarisbreen Series with an erosive contact. Throughout the whole succession there are Late Riphean stromatolites and microphytolites. The ca 2500 m thick A. Group includes four formations (in ascending order): Grusdievbreen, Svanbergfjellet, Draken and Backlundtoppen. The three upper formations were earlier united in the Akademikerbreen Series (Harland & Wilson 1956).

A.A.Krasil'shikov

AKADEMIKARBREEN SERIES

(Harland & Wilson 1956)

See Akademikerbreen Group (without Grusdievbreen Formation).

A.A.Krasil'shikov

ALASDAIRHORN FORMATION ("FORMACIJA")

Cambrian - E. Ordovician

(Harland et al. 1979)

Named from a mountain range in southern Prins Karls Forland.

Southern part of the island. It is the next lowest formation of the Peachflya Group. Both contacts are conformable. The larger part of the succession is composed of banded tuffs alternating with lava of basic composition. At the base of the formation there is a layer of volcanic sandstone. In the upper part, a division of alternating thin strata, composed of volcanic and carbonate material is observed. No fossils. The thickness is 190 m.

A.A.Krasil'shikov

ALKHORN(ET) FORMATION ("FORMACIJA")

Lt. Riphean

(Harland et al. 1979; member no. 6 according to Harland 1960).

Named from a peak on the northern side of Isfjorden.

Oscar II Land between Isfjorden and St. Jonsfjorden. It is conformably underlain by the Løvliebreen Formation, and unconformably overlain by conglomerates of the Comfortlessbreen Series. It is a carbonate formation composed mainly of banded marbles with dolomite intercalations, calcareous argillites, authentic breccias and conglomerates. Phytolitic varieties occur. The thickness is 1000 m.

A.A.Krasil'shikov, S.I.Turčenko

ANDVĚKA MEMBER ("TOLŠČA")

M.- Lt. Riphean

(Birkenmajer 1972)

Named from an inlet on the southern coast of Hornsund.

The distribution is local, along the western coast of Spitsbergen from Hornsund in the south to St. Jonsfjorden. It is the next lowest member of the Höferpynten Formation (according to Birkenmajer 1972). The lower and upper boundaries to the Fannytoppen and Wurmbrandegga members, respectively, are conformable, possibly interfingering. There are dolomites with chert inclusions and lenses of sedimentary breccias. The thickness is 300 m.

A.M.Teben'kov

ANGELLFJELLET AMPHIBOLITE ("FORMACIJA")

(Birkenmajer 1975)

Named from a mountain to the north of Hornsund.

Part of Skålfjellet Series (Subgroup) (see below). There occur epidote amphibolites and epidotes on the background of coarse-grained gabbro, alternating with epidote-hornblende schists. The unit occurs only locally. Because of prevailing intrusive magmatic rocks in the formation, it has no stratigraphical significance.

A.A.Krasil'shikov

ANNABREEN FORMATION ("FORMACIJA")
(C.B.Wilson in Harland 1960; Harland et al. 1979)
Named from a glacier in northern Oscar II Land.

Vendian ?

The occurrence is local. There is no available information as to thickness and boundaries. There occur massive pink, brown and white quartzites with granoblastic structures and meta-siltstones. Pebble material is missing. In the scheme by Harland et al. (1979) it is regarded as the middle (quartzite) formation of the Comfortlessbreen Group which separates the lower and upper "tillite" formations. Cutbill & Challinor (1965) previously ascribed it (by mistake?) to the E. Carboniferous.

A.A.Krasil'shchikov, S.I.Turčenko

ARIEKAMMEN FORMATION ("SVITA")
(Birkenmajer 1975, Krasil'shchikov & Kovaleva 1976)
Named from a mountain ridge on the northern side of Hornsund.

Late E. Proterozoic

Occurs locally in the stratotype area, north of Hornsund. It is the middle formation of the Isbjørnhamna "Serija". There is a gradual transition with the over- and underlying schistose Revdalen and Skoddefjellet formations, respectively. There are garnet-mica schists with marble and calciphyre bands, 0.5 to 40-70 m thick. The overall thickness of the formation is 300 to 400 m. Metamorphism is of amphibolite facies.

A.M.Teben'kov

ARIEKAMMEN SERIES
(Birkenmajer 1958)
See Arieammen Formation.
A.A.Krasil'shchikov

ARIEKAMMEN "TOLŠČA" (MEMBER)
(Krasil'shchikov 1973)
See Arieammen Formation.
A.A.Krasil'shchikov

ARKFJELLET FORMATION
(Major, Harland & Strand 1956)
See Arkfjellet Series.
A.A.Krasil'shchikov

ARKFJELLET SERIES ("SERIJA")
(Major & Winsnes 1955, Birkenmajer 1978b; see also Krasil'shchikov 1973)
Named from a mountain in Sørkapp Land.

E.- M. Ordovician ?

Central part of Sørkapp Land. It is arranged as a band between Devonian clastic rocks and Ordovician limestones. The relation to the underlying units is not clear. There are dark shales with dolomite laminae. Some 120 to 140 m from the base a bed of limestone conglomerate occurs. The total thickness is 200 m. No determinable fossils have been found. The stratigraphical position is not defined, though all authors (Major & Winsnes 1955, Krasil'shchikov 1973, Birkenmajer 1978b) regard the Arkfjellet Series as the youngest Ordovician unit in southern Spitsbergen. The A. Series should have a "svita" rank (Krasil'shchikov).

A.A.Krasil'shchikov

ARKFJELLET "TOLŠČA" (MEMBER)
(Krasil'shchikov 1987)
See Arkfjellet Series.
A.A.Krasil'shchikov

E.- M. Ordovician ?

ATOMFJELLA "SERIJA" (GROUP)
(Krasil'shchikov 1970, 1973)

E. Proterozoic

Named from a mountainous massif in southwestern Ny Friesland.

Western part of Ny Friesland. The lower and highly metamorphosed part of the Precambrian succession in Ny Friesland. Its boundary with the overlying Mossel Series is tectonic. Micaceous and garnet-mica

plagiogneisses, leucocratic gneisses, migmatites, quartzites, amphibolites and biotite-amphibolite schists, marbles and calcareous rocks. The overall thickness is about 7000 m. It is divided into 7 "svita", corresponding to formations in the British scheme; the lower two correspond to the Finnlandveggen Group, the other to the Harkerbreen Group (Harland et al. 1966).

S.A.Abakumov

AUSTFJORDEN GNEISSES

E. Proterozoic

(Harland & Wilson 1956)

The lower (?) part of the synonymous series (see below). The boundaries are not exposed. Gneisses and amphibolites with negligible amounts of biotite-amphibolite schists, quartzites and marbles. The thickness is 800 to 850 m. The Austfjorden Gneisses have later been included into the Eskolabreen Formation of the Finnlandveggen Group.

A.A.Krasil'shchikov

AUSTFJORDEN SERIES ("SERIJA")

E. Proterozoic

(Harland & Wilson 1956; Abakumov 1965)

From the eastern termination (Austfjorden) of Wijdefjorden bordering the Ny Friesland Peninsula to the SW.

Central part of West Spitsbergen. It is distinguished as a series of gneisses and amphibolites with subordinate amounts of quartzites and marbles. Its stratigraphical position is not clear. It had included two spatially separated members: Austfjorden Gneisses and (higher?) Cambridgeryggen Gneisses. Since, Abakumov (1965) has placed the A. Series (1100 m) at the base of the Hecla Hoek Complex, below the Finnlandveggen Series, changing its subdivision to Austfjorden and Smutsdalen "svita"s. In the unified scheme of Harland et al. (1966) the lower and upper members of the A. Series are included in the Finnlandveggen and Harkerbreen groups, respectively.

A.A.Krasil'shchikov

AUSTFJORDEN "SVITA" (FORMATION)

E. Proterozoic

(Abakumov 1965)

See Austfjorden Gneisses.

AUSTFONNA FORMATION (GROUP, "SVITA")

E.- M. Riphean ?

(Flood et al. 1969; Group: Ohta 1982)

Named from a glacier plateau (Austfonna) in central Nordaustlandet.

Primarily it was recognized as the upper member of the Botnia Series (Group), conformably overlying the sandy and shaley Brennevinsfjorden Formation (Flood et al. 1969). Since, it has been included into the Murchison Bay Series and it is supposed to erosively overlie the volcanics of the Kapp Hansteen Formation (Ohta 1982, Ohta & Lauritzen 1984). It is unconformably overlain by quartzitic sandstones of the Persberget Formation. Dark phyllites with bands of quartzites and carbonate rocks occur. The metamorphic grade is lower greenschist facies. The thickness is more than 2500 m. No fossils.

A.A.Krasil'shchikov

B

BACKABERG(ET) "SVITA" (FORMATION)

Vendian

(Krasil'shchikov 1967, 1973)

Named from a mountain on the southern side of Murchisonfjorden.

Western Nordaustlandet. The lower formation of the Gotia Series (see below), earlier by Kullig (1934) attributed to the upper part of the Ryssø Formation. It lies with a sharp contact, but without indication of an unconformity upon the Late Riphean dolomites of the Ryssø Formation. In the upper part there are indications of local erosion, though the boundary with the overlying Sveanor Formation generally is conformable. Rocks are dark-grey, thinly laminated, silty argillites and argillaceous, dolomitic siltstones; in the upper part (50 m), argillaceous/silty dolomites with Vendian microphytolites occur. The thickness is 200 to 250 m.

A.M.Teben'kov

BACKLUNDTOPPEN DOLOMITE

(Harland & Wilson 1956)

See Backlundtoppen, Upper "Podsvita".

A.A.Krasil'shchikov

BACKLUNDTOPPEN FORMATION ("SVITA")

*Lt. Riphean

(Harland et al. 1966, Krasil'shchikov 1973*)

From Backlundtoppen in western Olav V Land.

Developed in the stratotype area. It is the upper formation of the Lomfjorden Supergroup. The B. Formation lies conformably, or sometimes with a transitional contact, upon the Draken Formation. It is overlain by silico-argillaceous shales of the Vendian Elbobreen Formation (Polarisbreen Series) with an erosional boundary. There are two distinctly marked 'subformations' in the section: the lower limestones (200 to 400 m thick), and the upper dolomites (160 to 300 m thick); each subformation includes 3 members. The overall thickness of the formation is 360 to 700 m. The dolomites of the upper 'subformation' include *Tungussia* and *Canophyton* stromatolites. Besides, throughout the whole succession, microphytolites of Late Riphean - Vendian age occur (Raaben & Zabrodin 1969). According to the British scheme (Harland et al. 1966) the Backlundtoppen Formation is divided into 6 members: oolitic limestones, lower dolomites, oolitic dolomites, middle dolomites, shales, and upper dolomites.

A.A.Krasil'shchikov

BACKLUNDTOPPEN, LOWER "PODSVITA" ('SUBFORMATION')

Lt. Riphean

(Krasil'shchikov 1973)

Developed in the stratotype region. The L.B. "Podsvita" lies conformably between dolomites of the Upper Backlundtoppen 'subformation' and the Draken Formation. It is composed of three members (divisions); a lower one with dark siliceous limestones showing oolitic texture, a middle one with light grey, massive dolomites, and an upper one with alternating dark and light limestones (coloured oolitic horizon: Wilson 1961). The overall thickness is 200 to 400 m. Throughout the whole succession microphytolites of Vendian habitus are found (Raaben & Zabrodin 1969).

A.A.Krasil'shchikov

BACKLUNDTOPPEN OOLITES

(Harland & Wilson 1956)

See Backlundtoppen, Lower "Podsvita".

A.A.Krasil'shchikov

BACKLUNDTOPPEN, UPPER "PODSVITA" ('SUBFORMATION')

Lt. Riphean

(Krasil'shchikov 1973)

Developed in the stratotype region. The U.B. "Podsvita" lies conformably upon the lower limestone subformation and is overlain by the Elbobreen shale formation (Vendian) with an erosional contact. It consists of three members (divisions): the lower and upper are composed of massive light-grey dolomites and separated by a 20 m thick division of dark and coloured argillaceous shales. The subformation has a total thickness of 175-300 m. Stromatolites and microphytolites of Late Riphean - Vendian age have been found (Raaben & Zabrodin 1969).

A.A.Krasil'shchikov

BAKLIA FORMATION ("FORMACIJA")

Ordovician

(Harland et al. 1979)

From a small lake* in the central part of Prins Karls Forland.

Developed in the stratotype region only. It is the lower formation of the Scotia Group. The lower contact is tectonic; the contact with the overlying Kaggen Formation is gradual. Interlayering of black shales, dolomitic siltstones and siliceous limestones occurs; slates are predominant in the upper part of the formation. The thickness is 200 to 300 m. No fossils.

A.A.Krasil'shchikov

* Baklia is not a lake, but a mountain slope. The editor.

BANGENHUK(EN) FORMATION ("SVITA")

*E. Proterozoic

(Gayer & Wallis 1966, Harland et al. 1966, Krasil'shchikov 1973*) From a rocky point separating Mosselbukta and Wijdefjorden.

Northwestern Ny Friesland. The fifth formation from below of the Atomfjella Series (middle formation of the Harkerbreen Group; Harland et al. 1966). It lies conformably between the Rittervatnet and Vassfaret Formations. Migmatized biotite plagiogneisses with amphibolite lenses dominate. Lithologically, they are divided into two members: Flatøyrdalen (lower) and Femmilsjøen. The thickness is decreasing eastward from 2600-2000 m to 760 m.

S.A.Abakumov

BARENTS* FORMATION ("FORMACIJA")

Silurian ?

(Harland et al. 1979)

The middle formation of the Grampian Group. It lies conformably between the Conqueror (underlying) and Fuglehuk(en) formations. One may suggest a turbidite origin, as the succession is composed of alternating bands of unsorted sandstones, quartzites and banded siltstones. At the base there is a band of green, fine-grained quartzites; in the middle part a marker bed of shales with pyrite concretions occurs. Sandstones with flattened pebbles occur in the upper part. Fossils are not observed. The thickness is about 500 m.

A.A.Krasil'shchikov

* From Barentsfjellet, a mountain on northern Prins Karls Forland. The editor.

BARENTS GROUP ("GRUPPA")

(Atkinson 1956)

From a mountain (Barentsfjellet)* in northern Prins Karls Forland.

The argillaceous Barents Group is the next lowest within the stratigraphical sequence of the island's northern block.

See Barents Formation.

A.A.Krasil'shchikov

* the editor

BASAL QUARTZITE FORMATION ("FORMACIJA")

Lt. Proterozoic

(Ohta 1982)

Area between the western and eastern glaciers on Nordaustlandet. It rests unconformably upon sedimentary volcanic rocks of the Kapp Hansteen Formation and is conformably overlain by the sandy-argillaceous Djeveflota Formation. The B.Q.F. consists of quartzites with shaley and dolomitic intercalations. In its uppermost part calcareous sandstones occur. The thickness is 40-110 m.

A.A.Krasil'shchikov

BASSISLETTA MEMBER ("TOLŠČA")

E. Ordovician

(Fortey & Bruton 1973)

Named from a plain in north-eastern Ny Friesland.

Developed in the stratotype area. It is the middle member of the Kirtonryggen Formation in the northern section, correlating with the dolomite member of the stratotype. It lies conformably between lower and upper limestone members. Alternating dolomite, dolomitic limestone and limestone, horizons of stromatolitic and oolitic varieties, intraformational conglomerates (authigenic breccias) occur. The thickness is 250 m. Occasional trilobites of E. Ordovician (M. Canadian) age occur.

A.A.Krasil'shchikov

BELLSUND-DUNDERDALEN TILLITE

Vendian

(Hjelle 1969)

This unit comprises tilloid conglomerates north and south of Bellsund. The term is superfluous.

See Bellsund Series.

A.A.Krasil'shchikov

BELLSUND "SERIJA" (GROUP)

Vendian

(Krasil'shikov & Kovaleva 1976)

Originally recognized as a carbonate-clastic complex including all the conglomerate beds of the Spitsbergen west coast. Intense lateral variability of the complex is observed. The suggested total thickness exceeds 800 m. Erosion is supposed at the base, and a structural unconformity is possible. The B. Group is generally comparable with the Vendian tilloid beds in the other regions of the Archipelago (Polarisbreen and Gotia Series). Its internal subdivision is uncertain to a considerable extent, as the Kapp Linne and Kapp Lyell members (see below) might be stratigraphical equivalents. The Slyngfjellet Member (see below), however, is most likely older and was included into the B. Group by mistake.

A.A.Krasil'shikov

BELLSUND "SVITA" (FORMATION)

Riphean

(Krasil'shikov 1973, according to Hjelle 1962)

From Bellsund in the western part of the West Spitsbergen.

The B. Formation was recognized by Hjelle (1962) as a member of dolomite conglomerates resting at the base of the Precambrian section of western Nordenskiöld Land. The estimated thickness is 1000 m. It is stratigraphically similar to the conglomeratic Kapp Martin Member (see below) and comparable with the Slyngfjellet Member (see below).

A.A.Krasil'shikov

BERGNOVA FORMATION ("TOLŠČA", "FORMACIJA")

E.- ?M. Riphean

(Birkenmajer 1975)

Named from a nunatak on Hansbreen, West Spitsbergen, Wedel Jarlsberg Land.

It is the middle member of the Deilegga Formation (Birkenmajer 1958). Sericitic quartz schists (phyllites) with quartzite intercalations, 1800 m thickness. Gradational contacts with over- and underlying units.

A.M.Teben'kov, A.A.Krasil'shikov

BERGSKARDET FORMATION ("TOLŠČA", "FORMACIJA")

E.- ?M. Riphean

(Birkenmajer 1975)

Named from a pass in the Deilegga mountain range, southeastern West Spitsbergen.

Wedel Jarlsberg Land (and probably farther north). Upper "series" of the Deilegga Formation (Birkenmajer 1958). It rests conformably upon the middle schisty member with a transitional contact. It is unconformably overlain by the flyschoid carbonate Sofiebogen Series containing sericitic quartzose schists (phyllites) with quartzite intercalations. The thickness is 500 m.

A.M.Teben'kov, A.A.Krasil'shikov

BERTEL(TOPPEN)* "TOLŠČA" (MEMBER)

Early Lt. Proterozoic

(Krasil'shikov 1973; Micaschistes et quartzophyllades de Bertelt(oppen)*: Barbaroux, 1966)

Named from a mountain in the central Brøgger Peninsula, northwestern Spitsbergen.

Recognized in the stratotype region, where it is defined as the upper division of the "Quartzite and Mica Schist Formation" (see Nielsenfjellet Formation). Alternating micaceous schists, phyllites and micaceous quartzites. The thickness is 700 to 800 m. From recent data (Harland et al. 1979), the B.M. could be equivalent to the lower part of the Nielsenfjellet Formation.

A.A.Krasil'shikov

* The original author used an incomplete locality name. The editor.

BISKA YERHUKEN PELITES

Proterozoic

(Harland et al. 1966)

Named from a point at the northern end of Haakon VII Land.

They are developed in the stratotype area showing tectonic contacts. This garnet-mica schist and quartzite unit forms the upper part of the metamorphic complex of Haakon VII Land. The metamorphic grade is greenschist to epidote-amphibolite facies. The thickness is unknown. It is comparable with the Signehamna Formation of Krossfjorden (Abakumov 1979).

S.A.Abakumov

BJØRVIGFJELLET FORMATION ("FORMACIJA")
(Challinor 1967)

Lt. Proterozoic

Named from a mountain on the southern part of the Brøgger Peninsula, West Spitsbergen.

By its extent and stratigraphical position it completely corresponds to the Forland "Svita" (see below).

A.A.Krasil'shikov

BLACK SHALE FORMATION ("FORMACIJA")
(Hjelle et al. 1979)

Riphean

Occurs in the north of Prins Karls Forland. There are alternating black shales and limestones. Chert concretions within the shales are common. The thickness is 550-750 m. It conformably overlies the "Quartzite-sandstone Formation", thus being the uppermost unit of the succession of the northern block of Prins Karls Forland. However, this hypothesis still uncertain because of the complicated structural situation. (According to Hjelle et al. 1979, a recumbent syncline may be suggested.)

A.A.Krasil'shikov, S.I.Turčenko

BLEIKFJELLET PSAMMITES
(Harland & Wilson 1956)

See Bleikfjellet Formation.

S.A.Abakumov

BLEIKFJELLET "SVITA" (FORMATION)
(Abakumov 1965, Harland et al. 1966)

E. Proterozoic

Named from a mountain in southwestern Ny Friesland.

Common within the stratotype area. It is the lower member of the Harkerbreen "Svita". It rests conformably with transitional contacts between the underlying Smutsbreen Formation and the overlying quartzitic/amphibolitic Tordenryggen Member. The rocks are fine-grained two-mica plagiogneisses with schistose amphibolite intercalations and lenses; intensive migmatization and quartz segregation occur in anticline cores (see Camryggen Gneisses). The thickness is 450 to 500 m (according to Harland & Wilson 1956; exceeding 2000 m).

S.A.Abakumov

BLOMSTRANDHALVØYA FORMATION ("FORMACIJA")
(Harland et al. 1966)

Named from a peninsula in Kongsfjorden.

See Generalfjella Formation.

S.A.Abakumov

BLÅNUTEN BEDS ("SLOI")
(Harland et al. 1966)

Lt. Riphean

Named from a top in central Ny Friesland, close to the Veteranen glacier.

Recognized in the stratotype area, being the lower part of the Cavendishryggen "Podsvita" (Kingbreen Formation). There is a gradual transition to the quartz siltstones of the underlying Bogen "Podsvita". The upper contact is conformable. Massive coloured quartzites with quartz shale bands. The thickness is 150 to 200 m. No fossils.

A.A.Krasil'shikov

BLÅREVBREEN SANDSTONE (MEMBER)
(Swett 1981)

E. Cambrian

Named from a glacier in eastern Ny Friesland.

Eastern Ny Friesland. The lower sandstone member of the Tokammane Formation. It rests conformably (?) upon the multicoloured shales of the Polarisbreen Series and is conformably overlain by a shale member also assigned to the Tokammane Formation. The sandstones are quartzose, fine-to medium grained, obliquely laminated. The thickness is 25 - 32.5 m. It contains tubular features like *Diplocraterion*, *Monocraterion* and *Scolithus*. The bulk of the member corresponds to the lower part of the sandstones of the Tokammane Formation (Krasil'shikov 1973).

A.A.Krasil'shikov

BLÅSTERTOPPEN DOLOMITE

E. Cambrian

(Birkenmajer 1959)

See Blåstertoppen "Svita".

A.M.Teben'kov

BLÅSTERTOPPEN DOLOMITE FORMATION ("FORMACIJA")

E. Cambrian

(Birkenmajer 1975, 1978a)

See Blåstertoppen Formation.

A.M.Teben'kov

BLÅSTERTOPPEN "SVITA"* ("TOLŠČA", FORMATION)

E. Cambrian

(B. Dolomite: Birkenmajer 1959; B. Dolomite Fm.: Birkenmajer 1975, 1978a; B. "To.": Krasil'shikov 1973)

Named from a mountain in southern Wedel Jarlsberg Land, West Spitsbergen.

It occurs locally in Wedel Jarlsberg Land and Sørkapp Land. It is the lower formation of the Sofiekammen Series. Its lower boundary is an angular unconformity with the Precambrian Gåshamna Formation. The upper boundary is lithologically sharp, though without any indication of an unconformity. There are alternating sandy dolomites and dolomitic sandstones in the lower part of the formation. There are lenses of sedimentary breccias with angular clasts of underlying Precambrian dolomites and phyllites. Occasionally in the middle part horizons of black shales with olenellids occur. On Sørkapp Land the B. Formation is subdivided into 3 members (Birkenmajer & Orłowski 1977, Birkenmajer 1978a), the Gåsbreen, Flaksfjellet and Russepasset members (see appropriate sections). The overall thickness is 100 to 150 m. Some 36-40 m from the foot of the formation, an olenellid fauna was found indicating a late Early Cambrian age.

A.A.Krasil'shikov, A.M.Teben'kov

* first introduced as "svita" rank here

BOCKFJORDEN GNEISSES

Proterozoic

(Harland 1960)

Named from a fjord in northern Spitsbergen.

This is the lower unit of the metamorphic complex of Haakon VII Land. Garnet-mica gneisses and plagiogneisses, small granitoid bodies. The thickness is unknown, the contacts are tectonic. It may be correlated with the Finnlandveggen Series in Ny Friesland (Harland et al. 1966).

S.A.Abakumov

BOGEGG(A) FORMATION ("SVITA")

*Early Lt. Proterozoic

(Challinor 1967, Krasil'shikov 1973*)

Named from a mountain ridge on the southwestern part of the Brøgger Peninsula, West Spitsbergen.

Southern part of the Brøgger Peninsula. It is the lower (?) formation of the Kongsvegen Group. The contact with the overlying (?) Støenfjellet Formation is conformable, in some places tectonic. The lower contact is tectonic. There are dark quartzitic mica schists with some bands of quartzites and, less frequently, dolomitic marbles; in the lower part, mica-garnet schists locally have a porphyroblastic gneissose texture, and conformable amphibolites occur. The thickness is about 1500 m.

A.M.Teben'kov

BOGEGGA GROUP (Group de Bogegg)

(Barbaroux 1966)

See Bogegga "Svita".

A.M.Teben'kov

BOGEGGA MICA SCHISTS

(Orvin 1934; B. Mica Schist Fm.: Major, Harland & Strand 1956)

See Bogegga "Svita".

A.M.Teben'kov

BOGEN LIMESTONE MEMBER

(Harland et al. 1966)

See Bogen "Podsvita".

A.A.Krasil'shchikov

BOGEN "PODSVITA" (MEMBER)

Lt. Riphean

(Krasil'shchikov 1973; Bogen Limestone Mbr.: Harland et al. 1966)

Named from a mountain in central Ny Friesland.

Ny Friesland Peninsula, Veteranen glacier, Lomfjorden area. It is a middle member of the Kingbrean Formation. It has gradual contacts with both the over- and underlying 'subformations'. Alternating dark grey, oolitic limestones with brown dolomites. In the lower half, there is a unit of quartzitic sandstones, while on top, a section of coloured shales and siltstones occurs. The thickness is 200 to 800 m. In the limestones, microphyllites of the Late Riphean habitus are found (Raaben & Zabrodin 1969).

A.A.Krasil'shchikov

BOGSTRANDA UNIT ("TOLŠČA")

M.- Lt. Riphean to Vendian

(Harland 1978)

Named from a littoral plain on the north side of Hornsund, West Spitsbergen.

It is lithologically and stratigraphically equivalent to the Gåshamna Formation (see below) which previously had been recognized on the both sides of Hornsund (Major & Winsnes 1955, Birkenmajer 1958).

A.A.Krasil'shchikov

BOHRRYGGEN MEMBER ("TOLŠČA")

*E. Proterozoic

(Harland et al. 1966; Krasil'shchikov 1973*)

Named from a ridge in southwestern Ny Friesland.

Occurs in the stratotype area. It is the lower member of the Smutsbrøen Formation, resting conformably between the massive migmatites on top of the Eskolabreen Formation and the essentially carbonate rocks of the overlying Westbyfjellet Member. Rocks are coarsely graded, banded, garnetiferous gneisses and plagiogneisses with lenses of secondary quartz. The thickness is 700 m.

S.A.Abakumov

BOLSTER BEDS ("SLOI")

Lt. Riphean

(Wilson 1961).

This is a horizon of fine-wavy dolomitic limestones with a thickness of 30 to 60 m, resting at the base of the lower limestone member of Svanbergfjellet Formation. "Pillow Beds" (Krasil'shchikov 1973).

A.A.Krasil'shchikov

BOTNIAHALVØYA GROUP (SUBGROUP, BOTNIA "SERIJA")

E. Riphean

(Botniahalvøya Gr.: Flood et al. 1969; B. Supergroup: Ohta 1982)

Named from a peninsula in western Nordaustlandet.

Western and central Nordaustlandet. It is here defined as a "serija" for the first time. It overlies the Duvefjorden Metamorphic Complex with a structural unconformity and is overlain by the M.- Lt. Riphean Murchison Bay Series with an angular unconformity. The lower part of the B. Group (3500-5000 m) is volcanic: there are acidic and intermediate effusive rocks and their tuffs (see Kapp Hansteen Formation). The upper part (2000-3000 m) consists of sandstones and slates (see Brennevinsfjorden Formation). Norwegian geologists (Ohta 1982) have proposed a reverse order of the formations mentioned above. The metamorphic grade is lower greenschist facies. The thickness is 6000 to 8000 m. No fossils. As to the stratigraphical extent and lithological composition it corresponds to the Kapp Hansteen Formation (Krasil'shchikov 1970, 1973), but the name Botniahalvøya is the most preferable for the whole sequence, as it would be more advisable to preserve the name Kapp Hansteen for the volcanic part.

A.A.Krasil'shchikov

BRATTEGGA AMPHIBOLITE FORMATION ("FORMACIJA")

?

(Birkenmajer & Narebski 1960, Birkenmajer 1975)

From the central part of a mountain massif north of Hornsund, West Spitsbergen.

This is the upper member of the Skålfjellet Subgroup. Alternating fine-grained epidotic amphibolites and epidote-biotite schists. The occurrence is local. The formation has no stratigraphical significance because of a high portion of igneous rocks.

A.A.Krasil'shikov

BRENNEVINSFJORDEN FORMATION (GROUP, "SVITA")

E. Riphean

(Brennevinsfjorden Fm.: Flood et al. 1969; B. Gr. - Ohta & Lauritzen 1984; upper member of the Kapp Hansteen "Serija": Krasil'shikov 1973).

Named from a fjord in western Nordaustlandet.

Western and central Nordaustlandet. It lies conformably (?) upon the volcanic rocks of the Kapp Hansteen Formation and is overlain with an erosional and angular unconformity by quartzitic sandstones of the M.- Lt. Riphean Murchison Bay Series. Norwegian geologists (Ohta 1982; Ohta & Lauritzen 1984) have proposed a reverse order of the Brennevinsfjorden and Kapp Hansteen formations. There argillaceous, sericitic quartz slates, bands of quartzites, marbles and tuffaceous rocks; in some places at the base, there is a horizon of quartzitic conglomerates. Greenschist facies metamorphism. The thickness is 2-3 km. No fossils.

A.M.Teben'kov

BULLBREEN GROUP ("GRUPPA")

Lt. Ordovician - E. Silurian

(Harland et al. 1979)

Named from a glacier on the southern side of St. Jonsfjorden, West Spitsbergen.

Western part of Oscar II Land. Harland et al. (1979) collected two formations within the B. Group: The Motalafjella and Holmeslettjella formations (see below). A Bulltinden Conglomerate Member is distinguished as part of the latter formation, being its marker bed and containing rare fossils (see Bulltinden Conglomerate Member). It is underlain (?) by the Motalafjella limestone Formation. The contacts are mainly tectonic, though there is evidence of a conformable boundary between the B. Group and underlying Vendian conglomerates of the Comfortlessbreen Group (Hjelle et al. 1979). The total thickness of the group exceeds 700 m (1500 m - Hjelle et al. 1966). According to Hjelle et al. (1966), the Bullbreen Group corresponds in general to the Bulltinden Formation (see below) due to its stratigraphical position and fossil content.

A.A.Krasil'shikov

BULLTINDEN CONGLOMERATE MEMBER ("TOLŠČA")

Lt. Ordovician - E. Silurian

(Harland et al. 1979)

Named from a mountain on the southern side of St. Jonsfjorden, West Spitsbergen.

For the first time, the Bulltinden conglomerates were described by Høltedal (1913). Later, before fossils were found, they were by mistake correlated with Vendian (Eocambrian) conglomerates (Harland & Wilson 1956, Winsnes 1965; Flood et al. 1971). Within the more recent scheme by Harland et al. (1979), the B. Conglomerate Member is distinguished as a conformable marker horizon characterized by its fossils. It forms part of the Holmeslettjella Formation, which in its turn is part of the Lt. Ordovician - E. Silurian Bullbreen Group (see above).

A.A.Krasil'shikov, S.I.Turčenko

BULLTINDEN FORMATION ("FORMACIJA")

*Lt. Ordovician - E. Silurian

(Hjelle et al. 1979, Horsfield 1972*)

Distinguished by Horsfield (1972) as a unit of coarse-pebble polymict conglomerates south of St. Jonsfjorden. Since, it has been traced along the mountain ridges of western Oscar II Land. According to Hjelle et al. (1979) the B. Formation lies with a structural unconformity (?) upon Vendian tilloid conglomerates, while it has tectonic boundaries with older rocks. It consists of three parts: a lower one (1000 m) with alternating, coarse-grained sandstones and, in some places, conglomerates and shales; a middle one (450 m), with polymict boulder-pebble conglomerates including a 100 m thick succession of shales with limestone lenses; and an upper one (50 m) of dark limestones. Within the limestones of the middle part, there are remains of brachiopods, cephalopods, crinoids, corals and stromatolites of Late Ordovician - Early Silurian age (Scrutton et al. 1976). Within the upper limestones, fossils are poorly preserved. Fossils of Silurian age were earlier found in limestone clasts of conglomerates. The Bulltinden Formation in this sense corresponds stratigraphically to the Bullbreen Group (see above). The name "Bulltinden" would be more appropriate to retain for the conglomerate member itself as previously proposed by Horsfield.

A.A.Krasil'shikov, A.M.Teben'kov

C

CALC-ARGILLO-VOLCANIC FORMATION ("FORMACIJA")

Riphean (M.- L.?)

(Hjelle et al. 1979)

Oscar II Land and Prins Karls Forland. It is divided into 3 units based on prevailing rock types. The lower one (550 m) is composed of black, banded limestones. In the middle part black sercitic shales predominate (100 m), while the upper part is represented by green chloritic schists (metavolcanites, 300 m) including small gabbro and porphyrite intrusions. The total thickness of the formation is not less than 1000 m. It is overlain by Vendian conglomerates of the Comfortlessbreen Group with a stratigraphical unconformity and lies conformably upon the "Quartzite-Shale" or "Quartzite-Sandstone Formation" (Hjelle et al. 1979). According to its stratigraphical position it can be correlated with different parts of the St. Jonsfjorden Group (see below).

A.A.Krasil'shchikov, S.I.Turčenko

CAMBRIDGEBREEN GNEISSES

E. Proterozoic

(Harland & Wilson 1956)

Named from a glacier south of Austfjorden.

This is a homogeneous unit of dark gneisses. It is attributed to the Austfjorden Series. The boundaries are not exposed. The Cambridgebreen Gneisses have later been included into the Harkerbreen Group.

A.A.Krasil'shchikov

CAMRYGGEN GNEISSES

(Harland & Wilson 1956)

See Camryggen Member.

S.A.Abakumov

CAMRYGGEN "TOLŠČA" ("SVITA", MEMBER)

E. Proterozoic ?

(Abakumov 1965, Harland et al. 1966)

Named from a ridge in southwestern Ny Friesland.

Occurs in the stratotype region. It constitutes an intensively migmatized part of the Bleikfjellet "Svita" within the core of an anticline. The Camryggen quartzites and gneisses have a transitional boundary with the less altered part of the Bleikfjellet "Svita", both vertically and laterally. There are coarse-grained quartzitic gneisses, feldspar-bearing quartzites and amphibolite lenses. The thickness is 500 m. It was by mistake distinguished as an independent member by Abakumov (1965).

S.A.Abakumov

CAVENDISHRYGGEN LIMESTONES

(Harland & Wilson 1956)

See Bogen "Podsvita".

A.A.Krasil'shchikov

CAVENDISHRYGGEN "PODSVITA" (MEMBER)

Lt. Riphean

(Krasil'shchikov 1973; C. Quartzite Member: Harland et al. 1966)

Named from a ridge in central Ny Friesland.

Central Ny Friesland. It is the upper member of the Kingbreen Formation. It lies with a transitional contact upon quartzose siltstones of the middle "podsvita" (Bogen) and is conformably, though with a sharp boundary overlain by light quartzites of the Glasgowbreen Formation. There are quartzites and minor quantities of quartzose shales and graywackes. The total thickness is 250-400 m. No fossils. Wilson distinguished 3 divisions within the stratotype, that later have been summarized within 2 divisions: the Blånuten Beds (the lower and middle divisions) and the Rheanuten Beds (the upper division).

A.A.Krasil'shchikov

CAVENDISHRYGGEN QUARTZITES

(Harland & Wilson 1956)

See Cavendishryggen "Podsvita".

A.A.Krasil'shchikov

CELSIUSBERGET GROUP

M.- Lt. Riphean

(Flood et al. 1969)

Named from a mountain in the inner part of Murchisonfjorden in western Nordaustlandet.

Western and central Nordaustlandet. In the Norwegian scheme (Flood et al. 1969) it is the middle group of the Murchison-Bay "Serija" ("Supergroup"). It collects the Flora, Nordvik(a) and Raudstup(et)-Sälodd(en) formations.

A.M.Teben'kov

CHAMBERLINDALEN UNIT ("TOLŠČA")

Riphean

(Harland 1978)

Named from a valley in northern Wedel Jarlsberg Land.

In the scheme of Harland (1978) it is the fourth unit from below within the succession south of Bellsund, being the equivalent of the Höferpynten Unit (same scheme) developed north of Hornsund. Unlike the latter, the Ch. Unit is "in its lower part composed of alternating metavolcanites, pelites and carbonates". The upper part consists of limestones, partly oolitic, dolomites and phyllites. The thickness of the unit is not revealed. The stratigraphical position of the unit is uncertain.

A.A.Krasil'shchikov

COLOURED OOLITIC HORIZON

Lt. Riphean

(Wilson 1961)

This is a 'horizon' of alternating dark, grey limestones and light, silicified oolitic dolomites. The thickness is 50 m. It is situated within the upper part of the lower "podsvita" of the Backlundtoppen Formation (see above).

A.A.Krasil'shchikov

COMFORTLESSBREEN GROUP ("GRUPPA")

Vendian

(Harland et al. 1979)

Distinguished by C. Wilson (in: Harland 1960) within the area of the synonymous glacier in northern Oscar II Land.

Oscar II Land, West Spitsbergen. It unconformably overlies different units of the Riphean complex. The upper contact is normally tectonic, though there is evidence for a conformable boundary between the Comfortlessbreen and Bulltinden conglomerates. There occur foliated tilloidal conglomerates, bands of limestones and greenschists. In the middle part there are massive quartzites. According to data from Harland et al. (1979), a quartzite unit (Annabreen Formation, see above) separates two tillite units (Haaken and Engelsbukta formations, see below) in the stratotype region. The total thickness is 3000-4000 m. Metamorphism is of greenschists facies. The C. Group correlates with the well studied Polarisbreen and Gotia(halvøya) Series in the east of the archipelago, and also with the slaty conglomerates of Kapp Linne, Bellsund and southern Prins Karls Forland. Most investigators (Wilson & Harland 1964, and others) suggest these members to be of glaciomarine (tillitic) origin.

A.A.Krasil'shchikov, S.I.Turčenko

COMFORTLESSBREEN SCHISTS

(C. Wilson in Harland 1960)

See Comfortlessbreen Group.

A.A.Krasil'shchikov

CONQUEROR FORMATION (GROUP; "FORMACIJA", "GRUPPA")

Silurian ?

(Harland et al. 1979; C. Group: Atkinson 1956, 1960)

Named from a mountain in central Prins Karls Forland.

Atkinson places the "Conqueror Group" as the next highest within the succession of the northern block of the island. According to Harland et al., it is the next lowest formation of the Grampian Group resting conformably between the Utne (underlying) and Barents formations. The bulk of the formation is composed of massive grey quartzites; in the middle part of the succession these are alternating with dark grey slates. Occasionally calcareous bands with pebbles occur. No fossils are found. The thickness is 500-800 m.

A.A.Krasil'shchikov

CONWAYBREEN FORMATION ("FORMACIJA")

Lt. Proterozoic

(Harland et al. 1966, with reference to Challinor, in press; still not mentioned by Challinor, 1967, treating the structure of Brøggerhalvøya)

Named from a glacier in the inner part of Kongsfjorden.

The C. Formation is only recognized in the stratotype region. It is composed of gneisses which according to Harland et al. form the base of the succession of the Kongsfjorden area. It is conformably (?) overlain by the Feiringfjellet schist formation.

A.A.Krasil'shchikov

D

DEILEGGA FORMATION ("SVITA")

*E.? - M. Riphean

(Birkenmajer 1958, Krasil'shchikov 1973*)

Named from a series of nunataks (Deilegga) separating Hansbreen and Werenskioldbreen in Wedel Jarlsberg Land.

Occurrence: Wedel Jarlsberg Land, and farther north, where the stratigraphical equivalents of the D. Formation evidently are shale divisions resting between volcanic (below) and carbonate units. According to the recent scheme by Birkenmajer (1975) it is an upper group of the Torellbreen Supergroup. It is divided into 3 members (series, formations). At the base there are conglomerates, though the bulk of the formation consists of quartz-sericite and quartz-chlorite schists (phyllites) with dolomite beds in the middle part and quartzites in the upper. The thickness is 3500 m. At the base and on top of the formation unconformities are suggested (Birkenmajer 1959, 1975), the one above being angular.

A.A.Krasil'shchikov, A.M.Teben'kov

DEILEGGA GROUP

(Birkenmajer 1975)

See Deilegga Formation.

A.A.Krasil'shchikov

DIABASPYNTEN DIVISION ("PAČKA")

Vendian ?

(Harland 1978)

Named from a small promontory in southwestern Nordenskiöld Land.

The occurrence is local. According to the scheme of Harland (1978) this is the upper division of the Lågneshukta Unit. It shows a transition to the underlying tilloids. Overlying horizons are not known in the region. There are metavolcanites (tuffs and lava) alternating in the lower part with tilloids (shales with dispersed dolomite and quartzite pebbles). The thickness is 10 m.

A.A.Krasil'shchikov

DITLOVTOPPEN DOLOMITE (MEMBER)

E. Cambrian

(Swett 1981)

Named from a mountain on eastern Ny Friesland.

This unit is correlative to the dolomitic Tokammane Dolomite "Podsvita" by its stratigraphical range, lithology and fossil assemblages (Krasil'shchikov 1973).

A.A.Krasil'shchikov

DJEVLEFLOTA FORMATION ("FORMACIJA")

Lt. Proterozoic

(Ohta 1982)

Named from an area south of Rijpfjorden.

Northern part of Nordaustlandet. This is the middle formation of the Austfonna Group. It lies conformably between the Innvikhøgda and Basal Quartzite formations. The succession is composed of alternating sandstones and mudstones with quartzite layers and limestone lenses. The thickness is 400-1200 m.

A.A.Krasil'shchikov

DRAKEN CONGLOMERATE FORMATION

(Harland et al. 1966)

See Draken "Svita".

A.A.Krasil'shchikov

DRAKEN CONGLOMERATES

(Harland & Wilson 1956)

See Draken "Svita".

A.A.Krasil'shchikov

DRAKEN "SVITA" (FORMATION)

Lt. Riphean

(Krasil'shchikov 1973; Draken Conglomerate Fm.: Harland et al. 1966)

Named from a ridge in western Olaf V Land.

Occurs in a mountain massif in western Olaf V Land, Polarisbreen area in southeastern Ny Friesland. The third formation (in ascending order) of the Akademikerbreen Group. It lies conformably between limestone divisions of the Backlundtoppen Formation (above) and the Svanbergfjellet Formation; at the base, there is a competent bed of grey stromatolitic dolomites. The bulk of the D. Formation is composed of massive light dolomites with numerous bands and lenses of intraformational conglomerates, as well as oolitic and stromatolitic dolomites. The thickness varies within 250-300 m. Late Riphean - Vendian microphytolites occur (Raaben & Zabrodin 1969)

A.A.Krasil'shchikov

DRAKOISEN FORMATION ("SVITA")

*Vendian

(Harland et al. 1966, Krasil'shchikov 1973*)

Named from a mountain massif in eastern Ny Friesland.

Developed most completely in the stratotype area. This is the upper formation of the Polarisbreen Series. It lies conformably upon the tilloids of the Wilsonbreen Formation (middle part of Polarisbreen Series) and is sharply, though without indication of an unconformity, overlain by E. Cambrian (?) sandstones (Tokammane Formation). There are coloured shales and dolomitic shales with limestone and dolomite bands; up-section the content of silty and sandy material is increasing, while at the base of the formation there is a marker bed of light dolomite. The thickness is about 280 m. In the carbonate rocks there are microphytolites of Vendian habitus. (Raaben & Zabrodin 1969).

A.A.Krasil'shchikov

DUNDERBUKTA "SVITA" (FORMATION)

M.- Lt. Riphean

(Krasil'shchikov & Kovaleva 1976)

Named from a bay on the western coast of Spitsbergen, south of Bellsund.

Along the Spitsbergen west coast, from Hornsund in the south to Engelskbukta, and also on Prins Karls Forland. It is the upper, argillaceous-carbonate formation of the Werenskioldbreen "Serija". The lower boundary with the clastic/volcanic Vimsodden Formation is conformable. The upper boundary with the Gåshamna Formation is lithologically sharp, but without indications of an unconformity. There are black carbonaceous phyllites and limestones. The entire formation is characterized by the presence of phosphorites and by the increased contents of carbonic matter; one finds some bands of green carbonaceous, chloritic phyllites and quartzites. The thickness is 300-500 m. The scheme (Krasil'shchikov 1973, Birkenmajer 1958, 1975) mention the Deilegga Formation as a possible stratigraphical equivalent of the Dunderbukta Formation.

A.A.Krasil'shchikov

DUNØYANE MEMBER ("TOLŠČA")

M.- Lt. Riphean

(Birkenmajer 1972)

Named from an island group near the mouth of Hornsund, Spitsbergen.

Western coast of Spitsbergen, from Hornsund in the south to St. Jonsfjorden(?). This is the upper member of the Höferpynten Formation according to Birkenmajer (1972). The lower boundary with the Wurmbrandegga Member is conformable; the boundary with Gåshamna phyllite formation is possibly erosive. There are oolitic (microphytolitic) dolomites. The thickness varies from 40 m in the stratotype area to 200 m in the north.

A.M.Teben'kov

DUSKEN LIMESTONE

(Birkenmajer 1959)

See Dusken "Svita".

A.M.Teben'kov

E. Ordovician

DUSKEN LIMESTONE FORMATION

(Birkenmajer 1975, 1978b)

See Dusken "Svita".

A.M.Teben'kov

E. Ordovician

DUSKEN "SVITA"* ("TOLŠČA", FORMATION)

(Krasil'shikov 1973; D. Limestone Formation: Birkenmajer 1975, 1978b)

Named from a nunatak in Wedel Jarlsberg Land.

North and south of Hornsund. This is the third formation from below of the Sørkapp Land "Serija". The boundary with the underlying dolomites of the Luciapynten Formation is conformable. The upper boundary with the Hornsundtinden Formation is lithologically sharp, though also conformable. There are dark, thinly laminated limestones. It is represented to its full extent (100m) only in Wedel Jarlsberg Land. In Sørkapp Land, it is almost totally substituted with banded cherty limestones of the Nigerbrøen Member; the thickness of the Dusken limestones is here 20-30 m, while the total thickness usually is 100-150 m. There are no fossils in the Dusken limestones.

A.M.Teben'kov

* first introduced as "svita" rank here.

E. Ordovician

DUVEFJORDEN "KOMPLEKS" (COMPLEX)

(Gneiss with granite veins and dykes: Nordenskiöld 1863; Granites and Gneisses: Sandford 1926; Migmatites and synorogenic rocks: Flood et al. 1969; Metamorphic complex: Krasil'shikov 1973).

The name is introduced for the first time and is given after a fjord in northern Nordaustlandet.

Northeastern part of Nordaustlandet and adjacent islands. The base of the succession is not exposed; volcanic and clastic rocks of the Early Riphean Botniahalvøya Group overlie the D. "Kompleks" with a structural unconformity. There are shadow granites, migmatites, granitic gneisses, biotite, garnet-biotite, two-mica gneisses and less frequently biotite-hornblende schists and amphibolites. Metamorphism of amphibolite facies. The thickness is not defined.

A.M.Teben'kov

E. Proterozoic

E

EASTERN SHALES AND QUARTZITES

(Fairbairn 1933)

See Veteranen Group.

A.A.Krasil'shikov

EIMFJELLET FORMATION ("SVITA")

(Birkenmajer 1958, Krasil'shikov 1973*)

Named from a mountain between Hornsund and Werenskioldbreen on the western coast of Spitsbergen.

Western coast of Spitsbergen, north of Hornsund. Within the formation one can distinguish three lithologically different divisions: the lower, essentially quartzite (the Gulliksenfjellet Member), stratigraphically equivalent (?) amphibolites (the Skålfjellet Member) and the Vimsodden Member ("Svita") of chlorite-mica schists. Thickness estimates are varying within wide limits, from 1550 m (Krasil'shikov 1973) to 4500 m (Birkenmajer 1975). The metamorphic degree ranges from greenschist facies to the albite-epidote zone of the amphibolite facies. The E. Formation is stratigraphically equivalent to the Werenskioldbreen "Serija".

A.A.Krasil'shikov, A.M.Teben'kov

*E. Riphean (?)

EIMFJELLET GROUP

(Birkenmajer 1975)

See Eimfjellet Formation.

A.M.Teben'kov

EINSTEINFJELLET GNEISSES

(Harland & Wilson 1956)

See Einsteinfjellet Member.

A.A.Krasil'shchikov

EINSTEINFJELLET MEMBER ("SUBFORMACIJA")

E. Proterozoic

(Harland et al. 1966)

From the mountain Einsteinfjellet in southwestern Ny Friesland.

Occurs in the stratotype region. This is the upper member of the Eskolabreen Formation. It lies conformably between micaceous plagiogneisses of the underlying member and dark garnet-mica plagiogneisses of the Smutsbreen Formation. There are massive, pink migmatites ("feldspathites") and coarse-grained micaceous plagiogneisses. The thickness is 100 m.

S.A.Abakumov

ELBOBREEN FORMATION ("SVITA")

*Vendian

(Harland et al. 1966, Krasil'shchikov 1973*)

Named from a glacier in northwestern Olav V Land.

Eastern Ny Friesland Peninsula and western Olav V Land. It is the lower formation of the Polarisbreen Series, resting with an erosional boundary upon the Late Riphean dolomites of the Backlundtoppen Formation. It is conformably overlain by tilloid rocks of the Wilsonbreen Formation. It consists of two divisions: the lower one (50-110 m) is marked by densely alternating siliceous shales, dark limestones, dolomites and quartz sandstones; the upper one (170 m) is represented by black siliceous shales with dolomitic intercalations, prevailing in the upper layers of the division. The total thickness of the formation is 220-280 m. Within the dolomites of the lower division *Boxonia grumulosa* Kom. stromatolites occur (Raaben & Zabrodin 1969).

A.A.Krasil'shchikov

ELVEFLYA FORMATION ("FORMACIJA")

E. Riphean (?)

(Birkenmajer 1975)

Named from a littoral plain between the glaciers Nordenskiöldbreen and Torellbreen (Wedel Jarlsberg Land).

This is the upper formation of the Vimsodden Subgroup. There occur quartz-mica schists, phyllites, quartzites, "tilloid" and "amphibolite" lenses. The thickness is 2000 m. In others than the stratotype region it cannot be distinguished as an independent lithostratigraphical unit.

A.A.Krasil'shchikov

ENGELSKBUKTA FORMATION ("FORMACIJA")

Vendian

(Harland et al. 1979)

Named from a bay on the northwestern coast of Spitsbergen.

Occurs in Oscar II Land. Harland et al. (1979) distinguished it as the upper tillitic formation of the Comfortlessbreen Group. Lithologically, it does not differ from the lower, the Haaken Formation (see below), and might therefore alternatively be its stratigraphical equivalent.

A.A.Krasil'shchikov, S.I.Turchenko

ENPIGGEN BEDS

(Harland & Wilson 1956)

See Enpiggen "Podsvita".

A.A.Krasil'shchikov

ENPIGGEN "PODSVITA" (MEMBER)

Lt. Riphean

(Krasil'shchikov 1963, Harland et al. 1966)

Named from a nunatak on the glacier Oxfordbreen in southern Ny Friesland.

Ny Friesland Peninsula from Faksevangen in the north to Oxfordbreen. This is the lower "podsvita" of the Oxfordbreen Formation. It lies conformably upon graywackes of the Glasgowbreen Formation and is overlain by dolomitic shales of the upper member (Fulmarberget "P.") with a transitional boundary. The rocks are dark grey siltstones, fine-grained quartz sandstones and graywackes; in the lower part of the succession they are alternating with dark limestone, in places on the top thin conglomerate bands occur. The thickness of the member is 300-450 m. Within the limestones there are *Tungussia* stromatolites and Late Riphean microphytolites (Raaben & Zabrodin 1969).

A.A.Krasil'shnikov

ESKOLABREEN FORMATION ("SVITA")

*E. Proterozoic

(Harland et al. 1966, Krasil'shnikov 1973*)

From the glacier Eskolabreen in southwestern Ny Friesland.

Southwestern Ny Friesland Peninsula. It is the lower formation of the Atomfjella "Serija". The base of the succession is not exposed; it is conformably overlain by the garnet-mica plagiogneisses of the Smutsbreen Formation. There are light grey biotite plagiogneisses with lenses of biotite-amphibole schists; migmatization and quartz segregation processes are widely manifested. The thickness is 1500 m. It is divided into 4 members, the Sederholmfjellet, Malmgrenfjellet, Lemströmfjellet and Einsteinfjellet members. One should not exclude the possibility of repeated occurrences within regions with complicated fold structures.

S.A.Abakumov

ESKOLABREEN GNEISSES

(Harland & Wilson 1956)

See Eskolabreen Formation.

S.A.Abakumov

F

FANNYPYNTEN TILLOID DIVISION ("PAČKA")

Vendian ?

(Harland 1978)

Named from a point on the northern side of Hornsund.

The distribution is local. According to Harland (1978), it is the upper division of the "Tilloid Unit". There occur laminated, polymict conglomerates with unsorted pebbles of quartzite, "feldspathite", dolomite, limestone and schists. There are no data about the thickness. In the scheme of Birkenmajer (1958, and other years) the F.T. Division corresponds to the upper part of the Slyngfjellet Conglomerate Series.

A.A.Krasil'shnikov

FANNYTOPPEN MEMBER ("TOLŠČA")

M.- Lt. Riphean

(Birkenmajer 1972; F. Unit: Harland 1978)

Named from a mountain on the northern side of Hornsund.

Occurs only in the stratotype region. According to Birkenmajer (1972), it is the lower member of the Höferpynten Formation. An erosional base is suggested. The upper boundary with the Andvika Member is conformable and transitional. Stratified limestones and argillaceous dolomites alternate. The thickness is 80 m.

A.M.Teben'kov

FEIRINGFJELLET FORMATION ("FORMACIJA")

(Harland et al. 1966, with reference to Challinor, in press; but in Challinor, 1967, dealing with the structures of Brøggerhalvøya, F.F. is not mentioned.)

Named from a mountain in the inner part of Kongsfjorden.

Harland attributed the F. Formation to the "Lower Hecla Hoek Group". It is composed of quartzites and mica schists. It may be correlated with the Nielsenfjellet Formation (see below) on Brøggerhalvøya. It lies conformably (?) between the marbles of Blomstrandhalvøya and the underlying Conwaybreen gneisses.

A.A.Krasil'shnikov

FEMMELSJØEN MEMBER ("SUBFORMACIJA")

E. Proterozoic

(Harland et al. 1966, Gayer & Wallis 1966)

Named from a lake in northwestern Ny Friesland.

Occurs in the stratotype region. It is the upper member of the Bangenhuk(en) Formation. The boundary with the underlying Flatøyrdalen Member is transitional. The F. Member is overlain by the Vassfaret Formation without evidence of an unconformity. There are shadow-type and layered migmatites alternating at 100-150 m-scale. There are also rare amphibolite lenses, aplite and quartz-feldspar veins. The thickness is 500-1250 m.

S.A.Abakumov

FERRIER GROUP ("GRUPPA")

Lt. Proterozoic (Vendian ?)

(Atkinson 1960, Harland et al. 1979)

The name "Ferrier Peak Series" (see below) has earlier been defined by Tyrrell (1924). Atkinson did not define the general stratigraphical position of the Ferrier Group for all of Prins Karls Forland, but one may suggest that it constitutes the upper part of the succession of the southern block of the island. Harland et al. regard the F. Group as the lower group of the Forland Complex (see below). The base of the succession is unknown, while the upper boundary is tectonic. It is composed of "flyschoid mictites" and greywackes; in the lower part there are biotite schists and metavolcanic rocks. It is divided into 4 formations, from below: Isachsen, Hardiefjellet, Peterbukta and Neukpiggen formations. The total thickness is 730 m.

A.A.Krasil'shnikov

FERRIER PEAK SERIES ("SERIJA", "GRUPPA")

Proterozoic

(Tyrrell 1924; F.-P. Group: Major et al. 1956)

From the mountain Ferrierpiggen in eastern central Prins Karls Forland.

Occurs on the entire southern part of Prins Karls Forland. It was distinguished as a unit of calcareous phyllites and mica schists with dolomite and limestone intercalations. Thickness and stratigraphical position are not defined. Krasil'shnikov (1973) later suggested that the F.P. Series, estimated to c. 1500 m thickness, forms the lower part of the succession on the island. See also "Ferrier Group" (Harland et al. 1979), "Tillitic Conglomerate" and "Calc-Argillo-Volcanic Formation" (Hjelle et al. 1979).

A.A.Krasil'shnikov

FINNLANDEGGEN GROUP ("SERIJA", SERIES)

E. Proterozoic

(Harland et al. 1966; F. Series: Harland & Wilson 1956)

Named from a mountain ridge in southwestern Ny Friesland.

Southwestern Ny Friesland. The base of the succession is not exposed. At higher levels conformable leucocratic plagiogneisses, amphibole-biotitic schists (in the lower part), marbles and calcareous rocks (in the upper part) occur. The total thickness is 2700 m. The F. Group coincides generally with the two lower formations (Eskolabreen and Smutsbreen) of the Atomfjella "Serija" (Krasil'shnikov 1973).

S.A.Abakumov

FISHERLAGUNA FORMATION ("FORMACIJA")

Cambrian ?

(Harland et al. 1979)

Named from a lagoon on the southwestern coast of Prins Karls Forland.

Developed in the stratotype region. It is the lower formation of the Peachflya Group. The lower boundary is tectonic, while the upper one with the Alasdairhornet Formation is conformable. There are phyllites with thin sandstone lenses. The thickness is 350 m. No fossils are found.

A.A.Krasil'shnikov

FLAKFJELLET MEMBER ("PAČKA")

E. Cambrian

(Birkenmajer & Orłowski 1977, Birkenmajer 1978a)

Named from a mountain in Sørkapp Land.

Occurs locally in the stratotype region. This is the middle member of the Blåstertoppen Formation. The lower and upper boundaries with the Goesbreen and Russepasset members, respectively, are conformable and lithologically sharp. There are black shales with limestone inclusions and concretions. The thickness is 35 m. In the concretions remains of late Early Cambrian olenellids are found.

A.M.Teben'kov

FLATØYRDALEN MEMBER ("SUBFORMACIJA")

E. Proterozoic

(Harland et al. 1966, Gayer & Wallis 1966)

Named from a valley in the central part of the western coast of Ny Friesland.

Occurs in the stratotype region. It is the lower member of the Bangenhuk(en) Formation. It lies without any evidence of an unconformity upon the rocks of the Rittervannet Formation. The boundary with the overlying Femmilsjøen Member is transitional. There are evenly medium-grained, migmatized gneisses and plagiogneisses, conformable amphibolite bodies and crumpled pegmatite veins. The thickness is 260-735 m.

S.A.Abakumov

FLOGTOPPANE MEMBER ("TOLŠČA")

E. Cambrian

(Birkenmajer 1978a)

Named from a mountain in the southern Wedel Jarlsberg Land.

Southern Wedel Jarlsberg Land, northern Sørkapp Land. This is the upper member of the Vardepiggen "Podsvita". The lower and upper boundaries are conformable and lithologically sharp. The rocks are grey and black, often graphitic shales. In the lower part occur inclusions of sedimentary dolomite breccias, in the upper part dolomite and limestone bands. The thickness is from 30-40 m (Wedel Jarlsberg Land) to 100 m (Sørkapp Land). No fossils have been found.

A.M.Teben'kov

FLORA(BERGET)* SERIES

(Kulling 1934)

See Flora(berget)* "Svita".

A.A.Krasil'shikov

* The original author used an incomplete locality name. The editor.

FLORA(BERGET)* "SVITA" (FORMATION)

M.- Lt. Riphean

(Krasil'shikov 1965, 1973, Flood et al. 1969; F. Series: Kulling 1934)

The name was given by Kulling (1934) after a mountain on the northern coast of Murchinsonfjorden, western Nordaustlandet.

Western and central Nordaustlandet. It is the fourth (from below) formation of the Murchison Bay "Serija". It lies conformably but with sharp lower and upper boundaries between the Kapp Lord and Nordvika formations. There are light, often ferruginized quartzites and quartzitic sandstones, dark grey and red mudstones and siltstones. The thickness is 850-1300 m. No fossils are found.

A.M.Teben'kov

* The original author used an incomplete locality name. The editor.

FLÅEN FORMATION ("SVITA")

*E. Riphean (?)

(Harland et al. 1966, Wallis 1969, Krasil'shikov 1973*)

Named from a plateau on the northern end of Ny Friesland (northern Mossel Peninsula).

The lower formation of the Mossel "Serija". The lower boundary is tectonic, while the boundary with the overlying Vildadalen Formation it is conformable. There occur banded, coarse-grained garnetiferous schists and porphyroblastic feldspar gneisses, the latter prevailing in the middle part of the formation. The thickness is 1500 m.

S.A.Abakumov

FOLDNUTANE CONGLOMERATE DIVISION ("PAČKA")

Riphean

(Harland 1978)

Named from a mountain in central Wedel Jarlsberg Land.

Developed in the stratotype region, being the lower division of the Konglomeratefjellet Unit. There occur conglomerates with laminated quartzite matrix and well rounded quartzite, and less frequent dolomite boulders. The thickness exceeds 500 m. According to Harland (1978) the division is conformably overlain by calcareous sandstones of the Gaimardtoppen Division.

A.A.Krasil'shikov

FORLAND COMPLEX ("KOMPLEKS")

Lt. Proterozoic - Silurian

(Harland et al. 1979)

From Prins Karls Forland, the westernmost island in Svalbard.

The Forland Complex unites all the pre-Tertiary rocks of Prins Karls Forland. The boundary with the Tertiary deposits is tectonic, in some places a structural unconformity is exposed. The complex is divided into 5 groups, from below: Ferrier (Lt. Proterozoic), Geikie, Peachflya, Scotia (all of them E. Paleozoic?) and Grampian (Silurian?). The total thickness of the complex is about 7.5 km.

A.A.Krasil'shchikov

FORLAND GROUP (Group de Forland)

(Barbaroux 1966)

See Forland "Svita".

A.A.Krasil'shchikov

FORLAND "SVITA" (FORMATION)

Lt. Proterozoic - M.- Lt. Riphean

(Krasil'shchikov 1973; Dolomites and limestones at Forlandsundet: Orvin 1934)

Distinguished by Orvin at the base of the succession of the southern coast of Brøgger Peninsula and named after Forlandsundet which separates Prins Karls Forland from Spitsbergen. Later, most of the investigators regarded it as a younger unit, thrust from the south onto the rocks of the Kongsvegen Group (see Trondheimfjella Formation). The lower boundary is tectonic, while the upper one is not seen. The formation is mainly composed of dolomites and marmorized limestones. At the base there is a quartzite division, and in the upper part of the succession chlorite-carbonate schists are prevailing. The thickness of the formation is 1100 m.

A.M.Teben'kov, A.A.Krasil'shchikov

**FORLANDSUNDET, DOLOMITES AND LIMESTONES AT
(Orvin 1934)**

Lt. Proterozoic

See Forland "Svita".

A.A.Krasil'shchikov

FRANKLINSUNDET GROUP ("GRUPPA")

M. Riphean

(Flood et al. 1969; F. Svita: Krasil'shchikov 1973)

From Franklinsundet in northwestern Nordaustlandet.

Western and central Nordaustlandet. In the Norwegian scheme (Flood et al. 1969) this is the lower group of the Murchison Bay "Serija". It lies erosively upon the rocks of the Botniahalvøya Group and is conformably overlain by the quartzites of the Celsiusberget Group. It is divided into three formations, from below: Persberget Formation (300-400 m), quartzites with shale intercalations; Westmanbukta Formation (650 m), argillites and fine-grain sandstones; Kapp Lord Formation (1000 m), argillites with quartzite and limestone intercalations, the latter occasionally including M. Riphean microphytolites. Taking into account that each of these divisions has an extent corresponding to a "svita" (formation), it is inexpedient to give the whole "group" a formation rank as done by Krasil'shchikov (1973).

A.A.Krasil'shchikov

**FUGLEHUK(EN) FORMATION ("FORMACIJA", GROUP)
(Harland et al 1979; Fuglehuk(en) Group: Atkinson 1960)**

Silurian ?

From the mountain Fuglehukfjellet on the northern end of Prins Karls Forland.

Atkinson places the quartzitic "Fuglehuk Group" at the base of the succession of the northern block of the island. According to Harland et al., it is the second formation from above of the Grampian Group. It lies conformably between the Barents (underlying) and Geddesflya formations. It is composed of coarsely laminated, massive quartzites with banded siltstone intercalations. No fossils are found. The thickness decreases southwards from 1000 m to 400 m.

A.A.Krasil'shchikov

FULMARBERGET "PODSVITA" (MEMBER)

Lt. Riphean

(Krasil'shchikov 1973; F. (Shale) Member: Harland et al. 1966)

Named from a mountain in southern Ny Friesland.

Ny Friesland Peninsula, from Faksavågen in the north to the glacier Oxfordbreen. Through a transitional boundary it is connected with fine-grained sandstones of the lower Enpiggen "Podsvita", and is conformably overlain by Lt. Riphean limestones of the Grusdievbreen Formation. There occur dolomitic shales with dolomitic siltstones and sandstone intercalations. In the lower part of the "podsvita" rocks are greenish-grey, in the upper part they are alternating with brownish-red varieties. In some places near the top one may notice thin conglomerate intercalations. The thickness of the "podsvita" is normally 200-220 m, in the Polarisbreen area up to 350 m (Wilson 1958). No fossils are found.

A.A.Krasil'shchikov

FULMARBERGET SHALES

(Harland & Wilson 1956)

See Fulmarberget "Podsvita".

A.A.Krasil'shchikov

G

GAIMARDTOPPEN DIVISION ("PAČKA")

Riphean

(Harland 1978)

Named from a mountain in northern Wedel Jarlsberg Land, West Spitsbergen.

Recognized only near the stratotype. It is the upper member of the Konglomeratfjellet Unit. Dark, calcareous sandstones and siltstones of 500 m (?) thickness. The boundary with the underlying conglomerates is transitional.

A.A.Krasil'shchikov

GALOISTOPPEN BEDS

(Harland & Wilson 1956)

See Galoistoppen Member.

A.A.Krasil'shchikov

GALOISTOPPEN MEMBER ("PODSVITA")

*Lt. Riphean

(Harland et al. 1966, Krasil'shchikov 1973*)

Named from a mountain in central Ny Friesland.

Central part of Ny Friesland Peninsula, Faksevågen. This is the lower member of the Kingbreen Formation. It rests conformably upon coloured quartzites of the Kortbreen Formation and has a transitional boundary with carbonate rocks of the Bogen "Podsvita". The lower part of the member is essentially sandstones (greywackes, quartzitic sandstones, shales in the upper part; shales, dolomites and limestones alternate in the lower part). The thickness is 700 to 900 m. In its lower part there are two metabasic beds, 1 m thick each (Wilson 1958). In the limestone Late Riphean stromatolites are found (Raaben & Zabrodin 1969).

A.A.Krasil'shchikov

GANGPASSET GRANITIZATION ZONE

(Birkenmajer & Narebski 1960)

See Gangpasset Migmatite Formation.

A.A.Krasil'shchikov

GANGPASSET MIGMATITE FORMATION ("FORMACIJA")

(Birkenmajer 1975)

Named from a pass across the mountain massif to the north of Hornsund, West Spitsbergen.

It was originally distinguished as a granitization zone within the Skålfjellet Series. There are "migmatized amphibolites, metasomatic tonalites and monzonites". The occurrence is local; granitization processes are evidently of superimposed character. The Gangpasset Migmatite Formation has no lithostratigraphical significance.

A.A.Krasil'shchikov

GEDDESFLYA FORMATION ("FORMACIJA")

Silurian ?

(Harland et al. 1979)

From Geddesflya, a littoral plain in the central part of Prins Karls Forland, western coast.

Developed in the stratotype region only. It is the upper formation of the Grampian Group. The boundary with the underlying (?) Fuglehuk(en) Formation is not exposed.

A.A.Krasil'shchikov

GEIKIE GROUP ("GRUPPA")

Cambrian

(Atkinson 1960; Harland et al. 1979)

Named from a glacier (Geikiebreane)* in southwestern Prins Karls Forland.

Southern part of Prins Karls Forland. According to Harland it is the lower part of the succession in the southern block of the island. Both contacts are tectonic. It is divided into two formations: a lower carbonate one (Gordon Fm.) and an upper, mainly clastic one (Rossebukta Fm.). The total thickness is 770 m. Atkinson suggested the "Geikie Group" to be composed only of a sandstone division between the Ferrier and Gordon groups in the southern part of the island.

A.A.Krasil'shchikov

* the editor

GENERALFJELLA FORMATION ("SVITA")

Lt. Proterozoic

(Gee & Hjelle 1956; see also Krasil'shchikov 1973)

Named from a mountain massif on the eastern side of Krossfjorden.

Southwestern Haakon VII Land, Mitra Peninsula. It is the upper formation of the Krossfjorden Series. It lies unconformably (?) upon the quartzitic, schistose Signehamna Formation; the upper contact is not exposed. It is mainly composed of differently coloured "marbles" (marmorized limestones and dolomites), alternating with quartz-mica schists and quartzites in its lower part. A 200 m thick, intensively folded schist division rests in the middle part of the succession. It has been included into the underlying Signehamna Formation by Abakumov (1976). The grade of metamorphism is lower greenschist facies. The thickness is about 2000 m.

S.A.Abakumov

GLASGOWBREEN FORMATION ("SVITA")

*Lt. Riphean

(Harland et al. 1966, Krasil'shchikov 1973*)

Named from a glacier in central Ny Friesland.

Ny Friesland, central part, from the upper part of the Veteranen glacier to Lomfjorden. It is the third formation from below of the Veteranen Group. It lies conformably, though with a sharp contact upon dark quartzites of the Kingbreen Formation and is conformably overlain by dark siltstones and sandstones of the Oxfordbreen Formation. Within the succession there are alternating light quartzite and dark greywacke divisions: the lower quartzite, the lower greywacke, the upper quartzite and upper greywacke. The total thickness of the formation is about 800 m. No fossils. Wilson (1958) collected the three upper divisions within the "Glasgowbreen Greywackes" while the lower one was distinguished as "Glasgowbreen Quartzites".

A.A.Krasil'shchikov

GLASGOWBREEN GREYWACKES

(Harland & Wilson 1956)

See Glasgowbreen Formation (upper part).

A.A.Krasil'shchikov

GLASGOWBREEN LOWER GREYWACKES

(Wilson 1958)

See Glasgowbreen Formation.

A.A.Krasil'shchikov

GLASGOWBREEN, UPPER GREYWACKES

(Wilson 1958)

See Glasgowbreen Formation.

A.A.Krasil'shchikov

GLASGOWBREEN QUARTZITES

(Harland & Wilson 1956)

See Glasgowbreen Formation (lower part).

A.A.Krasil'shchikov

GLASGOWBREEN, LOWER QUARTZITE

(Wilson 1958)

See Glasgowbreen Formation.

A.A.Krasil'shchikov

GLASGOWBREEN, UPPER QUARTZITES

(Wilson 1958)

See Glasgowbreen Formation.

A.A.Krasil'shchikov

GNÆSS WITH GRANITE VEINS AND DYKES (NORDAUSTLANDET) Archean

(Nordenskiöld, 1863)

See Duvefjorden "Kompleks".

A.A.Krasil'shchikov

GNÅLBERGET MARBLE M.? Cambrian

(Birkenmajer 1959)

See Gnålberget "Svita".

A.A.Krasil'shchikov

GNÅLBERGET MARBLE FORMATION M.? Cambrian

(Birkenmajer 1975, 1978a)

See Gnålberget "Svita".

A.A.Krasil'shchikov

GNÅLBERGET "SVITA"*, ("TOLŠČA", FORMATION) M.? Cambrian

(Krasil'shchikov 1973)

Named from a mountain on the northern shore of Hornsund.

Southern Wedel Jarlsberg Land. The third formation from below of the Sofiekammen Group. The lower boundary is conformable, in many places tectonic. The upper boundary is tectonic. There are massive recrystallized limestones (marbles) and minor amounts of dolomites, limestones and sandy dolomites. The thickness is 250 to 300 m. No fossils.

A.M.Teben'kov

* first introduced as "svita" rank here.

GOESBREEN MEMBER ("TOLŠČA") E. Ordovician

(Birkenmajer 1978b)

Named from a glacier in Sørkapp Land.

Occurs locally in the stratotype region. It is the upper member of the Wiederfjellet "Svita". It has transitional boundaries with the underlying Paierlbreen Member and overlying dolomites of the Luciapynten Formation. Dark calcareous shales with quartzites, limestones and dolomite beds. The thickness is up to 270 m. No fossils.

A.M.Teben'kov

GORDON FORMATION (GROUP, "FORMACIJA") Cambrian

(Harland et al. 1979; Gordon Gr.: Atkinson 1960)

Named from a promontory* on the eastern strand of Prins Karls Forland.

Developed in the stratotype region. Atkinson placed the Gordon Group at the base of the succession in the southern block of the island. Harland called it the lower formation of the Geikie Group. The lower contact is tectonic. It is overlain by the Rossebukta Formation with a transitional boundary. The unit is mainly composed of limestones and dolomites, partly laminated; in the lower part of the succession there are thin siltstone beds

and lenses of intraformational conglomerates. The thickness is 470 m. No fossils.

A.A.Krasil'shchikov

* Named from Gordonpynten, a point at Brucebukta, Prins Karls Forland. The editor.

GOTIA "SERIJA" (GROUP)

Vendian

(Krasil'shchikov 1967, Harland 1985)

Named from a peninsula (Gotiahelvøya)* in western Nordaustlandet.

Western part of Nordaustlandet. It lies without indication of an unconformity, though with sharp contacts, between the Lt. Riphean and the quartzose sandstones of the Cambrian Kapp Sparre Formation. It is essentially a clastic division uniting three formations: Backaberg(et), Sveanor and Klackbergbukta (see B., S., and K.). The upper and lower formations are composed of dark, silty argillites, marly siltstones and silty dolomites. The middle formation, the Sveanor Fm. (50-130 m), is characterized by the predominance of sandstones and the presence of tilloid horizons enriched in coarse clastic material. The total thickness of the "serija" is 500-650 m. In the lower part there are microphytolites of Vendian age.

A.M.Teben'kov

* the editor

GRAMPIAN* GROUP ("GRUPPA")

Silurian ?

(Harland et al. 1979)

One has used the name of the earlier defined "Northern Grampian Series" (Tyrrell 1924) (see below).

The upper part of the succession of the Forland Complex (see above) on Prins Karls Forland. It has a transitional boundary with the rocks of the underlying Scotia Group. The group includes alternating thick turbidite, quartzite and schist divisions (formations). The Grampian Group is divided into 5 conformable formations, from below: Utnes, Conqueror, Barents, Fuglehuk(en) and Geddesflya formations. The total thickness is 3600 m. According to data from Hjelle et al. (1979), the "Quartzite-sandstone formation" (see below) that can be correlated with (at least part of) the Grampian Group, is of Late Proterozoic (pre-Vendian) age.

A.A.Krasil'shchikov

* From Grampianfjella, southern Prins Karls Forland. The editor.

GRANITE AND GNEISS (NORDAUSTLANDET)

Archean

(Sandford 1926)

See Duvefjorden "Kompleks".

A.A.Krasil'shchikov

GRUSDIEVBREEN FORMATION ("SVITA")

*Lt. Riphean

(Harland et al. 1966, Krasil'shchikov 1973*)

Named from a glacier in southern Ny Friesland.

In the mountain massif between Olaf V Land and Ny Friesland, as well as Grusdievbreen and Akademikerbreen. It was primarily distinguished as a series within the limits of the upper part of the Middle Hecla Hoek (Harland & Wilson 1956), but has since been included into the Akademikerbreen Group (Krasil'shchikov 1973, after Harland et al. 1966) as lower formation. It lies conformably upon dolomitic shales of the Oxfordbreen Formation, Veteranen Group, and is conformably overlain by dolomites of the Svanbergfjellet Formation. The rocks are limestones and minor amounts of dolomites. A marker horizon of dark red, calcareous siltstones divides the G. Formation into lower dark and upper light limestones. The total thickness is 850 -865 m. Throughout the whole succession there are abundant microphytolites, and, in the upper division, stromatolites ascribed to Late Riphean age (Raaben & Zabrodin 1969).

A.A.Krasil'shchikov

GRUSDIEVBREEN, LOWER DIVISION ("PODSVITA")

*Lt. Riphean

(Harland et al. 1966, Krasil'shchikov 1973*)

Occurs in the mountain massif between Oxfordbreen and Akademikbreen. It lies conformably upon dolomitic schists of the Oxfordbreen Formation and is conformably overlain by light limestones of the upper division. There are dark grey limestones with laminae of silicified and dolomitic varieties as well as dolomites and dolomitic siltstones. The division is divided into 4 units (Wilson 1961; Krasil'shchikov 1973); the total thickness

is 400-420 m. Abundant Late Riphean microphytolites are found.

A.A.Krasil'shchikov

GRUSDIEVBREEN, UPPER DIVISION ("PODSVITA")

*Lt. Riphean

(Harland et al. 1966, Krasil'shchikov 1973*)

Occurs in a mountain massif to the south of Grusdievbreen. It lies conformably upon the dark limestones of the lower subformation and is in its turn conformably overlain by dolomites of the Svanbergfjellet Formation. There are light-grey banded limestones with laminae of spotted dolomitized varieties (?) and oolitic limestones. At the base there is a marker horizon (10 m) of brownish-red calcareous siltstones. The overlying succession includes five units (Wilson 1961); the thickness is about 450 m. There are stromatolites and microphytolites of the Late Riphean age (Raaben & Zabrodin 1969).

A.A.Krasil'shchikov

GRUSDIEVBREEN, LOWER LIMESTONES

(Harland & Wilson 1956)

See Grusdievbreen, Lower Division.

A.A.Krasil'shchikov

GRUSDIEVBREEN, UPPER LIMESTONES

(Harland & Wilson 1956)

See Grusdievbreen, Upper Division.

A.A.Krasil'shchikov

GRÅKALLEN FORMATION

(Major, Harland & Strand 1956)

See Gråkallen Series.

A.A.Krasil'shchikov

GRÅKALLEN SERIES ("SERIJA")

E. Ordovician

(Major & Winsnes 1955)

Named from a mountain in central Sørkapp Land.

Occurs in Sørkapp Land and Wedel Jarlsberg Land. The G. Series is equivalent to most of the Sørkapp Land "Serija". It overlies Cambrian deposits of the Sofiekammen Formation with a stratigraphical unconformity. The upper boundaries have not been described. It is divided into 4 limestone members (Hornstollodden, Nigerbreen, Rasstupet and Tshebysjovfjellet members - see below); at the base of the lower member a division of quartzites and dolomitic sandstones occurs (see Wiederfjellet "Svita"). The total thickness is 700 m (Major & Winsnes 1955) to 1300 m (Krasil'shchikov 1973). In the limestones of the lower member Early Ordovician gastropods are found.

A.A.Krasil'shchikov

GULLIKSENFJELLET QUARTZITE FORMATION

(Birkenmajer 1975)

See Gulliksenfjellet "Tolšča".

A.A.Krasil'shchikov

GULLIKSENFJELLET "TOLŠČA" (MEMBER)

E. Riphean ?

(Krasil'shchikov 1973)

Named from a mountain north of the mouth of Hornsund.

As an independent member, it is recognized only in the stratotype area. It is distinguished as a lower, quartzite member (series, formation) of the Eimfjellet Group by Birkenmajer (1958). According to Krasil'shchikov & Kovaleva (1976), the Gulliksenfjellet quartzite member occupies a higher stratigraphic position at the base of the Vimsodden Formation. There are light quartzites, rhythmically alternating with dark micaceous and chloritic schists. The thickness of the entire member is 200-300 m (Krasil'shchikov & Kovaleva 1976) or 500-850 m according to Birkenmajer (1975).

A.A.Krasil'shchikov

GULLIKSENFJELLET SERIES

(Birkenmajer 1958)

See Gulliksenfjellet "Tolšča".

A.A.Krasil'shchikov

GÅSBREEN MEMBER ("PAČKA")

E. Cambrian

(Birkenmajer & Orłowski 1977; Birkenmajer 1978a)

Named from a glacier in Sørkapp Land.

Developed in the stratotype region. It is the lower member of the Blåstertoppen Formation, lying with an angular (?) and stratigraphical unconformity upon the schists of the Precambrian Gåshamna Formation. It is conformably overlain by the dark schists of the Flakfjellet Member. Sandy dolomites turn up-section into dolomites and dolomitic limestones. The thickness is 35 m. No fossils.

A.M.Teben'kov

GÅSHAMNA PHYLLITE FORMATION

(Birkenmajer 1975)

See Gåshamna "Svita".

A.A.Krasil'shchikov

GÅSHAMNA PHYLLITES

(Major & Winsnes 1955; Major, Harland & Strand 1956)

See Gåshamna "Svita".

A.A.Krasil'shchikov

GÅSHAMNA SERIES

(Birkenmajer 1958)

See Gåshamna "Svita".

A.A.Krasil'shchikov

GÅSHAMA "SVITA" (FORMATION)

M.- Lt. Riphean - Vendian ?

(Krasil'shchikov 1973; Krasil'shchikov & Kovaleva 1976)

Originally defined by Major & Winsnes (1955: "Gåshamna Phyllite") after a bay on the southern side of Hornsund.

Occurs at the western coast of Spitsbergen, to the north and south of Hornsund and northward to St. Jonsfjorden. It is the upper formation of the Sofiebogen Group, supposing recumbent bedding in the stratotype area (Birkenmajer 1958, 1972 and later). Krasil'shchikov & Kovaleva (1976) regard it as the lower formation of the same group (see below). The lower boundary is lithologically sharp and conformable. At the boundary with the overlying Höferpynten Formation, one can locally suggest an erosive contact (Krasil'shchikov & Kovaleva 1976). Sericitic slates (meta-argillites and metasiltsstones) with occasional beds of sandstones and carbonate rocks occur; the latter contain microphytolites of M. Riphean age. The thickness of the formation is estimated to 1200 m (Krasil'shchikov & Kovaleva 1976) or 1500-2500 (Birkenmajer 1975).

A.A.Krasil'shchikov, A.M.Teben'kov

H

HAAKEN FORMATION ("FORMACIJA")

Vendian

(Harland et al. 1979)

From Haaken Mathiesenfjella, a mountain massif in northern Oscar II Land.

Occurs in northern Oscar II Land. Harland et al. (1979) have distinguished it as the lower ("tillite") formation of the Comfortlessbreen Group. There occur laminated, unsorted conglomerates; dolomite clasts with phytolite structures, as well as limestone, quartzite, and less frequently granitoid clasts are spread within cherty limestones matrix. Occasionally, limestone with greenschist intercalations occur. No information is available on thickness and relations to over- and underlying units.

A.A.Krasil'shchikov, S.I.Turčenko

HANSBREEN MEMBER ("TOLŠČA")

M.- Lt.(?) Cambrian

(Birkenmajer 1978b)

Named from a glacier on the northern coast of Hornsund.

Southern Wedel Jarlsberg Land, a few localities in Sørkapp Land. It is the low member of Nørdstetinden Formation. The lower boundary is usually tectonic. The upper boundary is conformable; sometimes there is a transitional boundary with the Nørdstebreen dolomite member. There are light or dark grey dolomites with grey chert inclusions. The thickness is up to 100 m. No fossils are found. The age is preliminarily defined according to the stratigraphical position.

A.M.Teben'kov

HANSBREEN TILLOID DIVISION ("PAČKA")

Vendian ?

(Harland 1978)

Named from a glacier on the northern coast of Hornsund.

Local occurrence. This is the lower division of the "Tilloid Unit" according to Harland 1978. There are tilloid conglomerates with spread dolomite, limestone and quartzite clasts. No data on the thickness are available. In the scheme of Birkenmajer (1958, and other years) it corresponds to the lower part of the Slyngfjellet Conglomerate Series.

A.A.Krasil'shchikov

HARDIEFJELLET FORMATION ("FORMACIJA")

Lt. Proterozoic

(Harland et al. 1979)

Named from a mountain in southern Prins Karls Forland.

Developed in the stratotype area, being the second formation from below of the Ferrier Group. It lies conformably between the Isachsen (below) and Peterbukta formations. It is composed of cherty slates with bands enriched in boulder and pebble material. The thickness is 120 m.

A.A.Krasil'shchikov

HARKERBREEN GROUP ("GRUPPA")

E. Proterozoic

(Harland et al. 1966, Gayer & Wallis 1966)

Named from a glacier in southwestern Ny Friesland.

Western Ny Friesland Peninsula. This is the middle group of the Stubendorffbreen Supergroup. The boundaries are not exposed. Quite different successions for the western and eastern sides of the main anticlinal structure are referred to it (Harland et al. 1966). The eastern succession (see Harkerbreen "Svita") has a bimodal development: migmatized plagiogneisses with amphibolites below (Bleikfjellet "Svita"), and quartzites and amphibolites (Tordenryggen "Svita") above; the total thickness is 2500-4000 m. The western succession is divided into 5 formations: the Polhem, Rittervatnet, Bangenhuk(en), Vassfaret and Sørbreen formations with differently alternating two-mica and garnet plagiogneisses, migmatites, quartzites, amphibolites, marbles and calcareous rocks. The total thickness is 3300-3800 m.

S.A.Abakumov

HARKERBREEN SERIES ("SERIJA")

(Harland & Wilson 1956, Abakumov 1965)

See Harkerbreen "Svita".

A.A.Krasil'shchikov

HARKERBREEN "SVITA" (FORMATION)

E. Proterozoic

(Krasil'shchikov 1973)

Western Ny Friesland. This is the third formation from below of the Atomfjella "Serija". It lies with a transitional boundary upon garnet-mica plagiogneisses of the Smutsbreen Formation; the upper boundary is not exposed. Its lower division (Bleikfjellet "Svita") consists of two-mica plagiogneisses with amphibolite intercalations and lenses, and with biotite-amphibolite schists; migmatization is intensive. The upper unit (Tordenryggen "Svita") consists of muscovite plagiogneisses and quartzites, and also amphibolites. The total thickness is 1000-1300 m (according to Harland et al. 1966; up to 4000 m). As to its extent and lithology, the H. "Svita" corresponds to the synonymous group in the original concept (Harland & Wilson 1956) and to the eastern succession of the H. Group in the unified British scheme (Harland et al. 1966). One may suppose that

the formations composing the western succession rest at a higher stratigraphical level than the Harkerbreen "Svita" (Krasil'shchikov 1973).

A.A.Krasil'shchikov

HECLA HOEK COMPLEX ("KOMPLEKS")

Precambrian - E. Paleozoic

(Krasil'shchikov 1970, 1973)

The Hecla Hoek Complex is developed in the northern half of Nordaustlandet, on Ny Friesland, on northwestern Spitsbergen and along its western coast. The name was primarily given by Nordenskiöld (1863; "Hecla Hoek Formation") for a quartzite, schist and limestone division building up the synonymous high (on modern maps "Heclahuken") in northeastern Ny Friesland. Later, De Geer (1909), after attributing it to Silurian age, united in this "formation" all the deposits formed before the Caledonian folding. The first scheme of stratigraphical and lithological subdivision of the "Hecla Hoek" was given by Kullig (1934) for Nordaustlandet. Since, it was defined more exactly by Norwegian (Flood et al. 1969) and Soviet (Krasil'shchikov 1973) geologists. A detailed scheme of the subdivision of the Hecla Hoek succession of Ny Friesland has been contributed by Harland & Wilson (1956) and Harland et al. (1966). They subdivided the whole succession, about 19 km thick, into three groups: the lower (metamorphic), the middle (Lt. Precambrian) and the upper one (Eocambrian - Ordovician). This subdivision became a correlative base for different regional schemes within the archipelago (Harland 1960, Harland et al. 1966). The groups distinguished within the Ny Friesland succession correspond to the five "serija"s of the Soviet stratigraphical scheme of the Hecla Hoek Complex (Krasil'shchikov 1970, 1973): Atomfjella and Mossel series (lower group, M. Precambrian), Lomfjorden Series (middle group, M.- Lt. Riphean), Polarisbreen and Oslobreen series (upper group, Vendian and Cambrian-Ordovician).

A.A.Krasil'shchikov

HECLA HOEK FORMATION

(Nordenskiöld 1863; De Geer 1909; Kulling 1934; Orvin 1940)

See Hecla Hoek Complex.

A.A.Krasil'shchikov

HECLA HOEK, LOWER

E. Proterozoic

(Harland & Wilson 1956)

Recognized on Ny Friesland as the lower part of Hecla Hoek Complex, summarizing metamorphic rocks. It has since been transferred to the rank of a supergroup (Stubendorffbreen Supergroup: Harland et al. 1966).

See Stubendorffbreen Supergroup.

A.A.Krasil'shchikov

HECLA HOEK, MIDDLE

Lt. Proterozoic

(Harland & Wilson 1956)

It was distinguished in Ny Friesland as the middle part of the Hecla Hoek Complex and later transferred to the rank of a supergroup, the Lomfjorden Supergroup (Harland et al. 1966). According to the Soviet scheme it has been given the same status as "Lomfjorden Series" (Krasil'shchikov 1970, 1973). In its stratotype region it has been divided into two parts: the lower, essentially clastic one, and the upper, carbonaceous one.

See Lomfjorden Supergroup.

A.A.Krasil'shchikov

HECLA HOEK, LOWER PART OF MIDDLE

(Harland & Wilson 1956, Wilson 1958)

See Veteranen Group.

A.A.Krasil'shchikov

HECLA HOEK, UPPER PART OF MIDDLE

(Harland & Wilson 1956, Wilson 1961)

See Akademikerbreen Group.

A.A.Krasil'shchikov

HECLA HOEK, UPPER
(Harland & Wilson 1956)

Vendian

Recognized on the Ny Friesland peninsula and then transferred to supergroup rank (Hinlopenstretet Supergroup, Harland et al. 1966). It has widely been used for interregional correlations as an upper and relatively slightly metamorphosed part of the Hecla Hoek Complex. It includes Ordovician and Cambrian, mainly carbonate divisions with characteristic fossils, as well as Vendian clastic deposits with some tilloid horizons. The latter has a stratigraphical contact, with indications of erosion, to underlying carbonate deposits of the Middle Hecla Hoek. In its stratotype region the Upper Hecla Hoek has been divided into two series: Oslobreen (Cambro-Ordovician) and Polarisbreen series (Vendian, Eocambrian).
See Hinlopenstretet Supergroup.

A.A.Krasil'shnikov

HECLA HOEK SUCCESSION

(Harland & Wilson 1956; Harland et al. 1966)

See Hecla Hoek Complex.

A.A.Krasil'shnikov

HINLOPENSTRETET SUPERGROUP ("NADGRUPPA")

(Harland et al. 1966)

Vendian (Eocambrian, 'Infracambrian') -
Ordovician

Named from a sound between Spitsbergen and Nordaustlandet.

Eastern Ny Friesland peninsula and northwestern coast of Nordaustlandet. It is the upper part of the Hecla Hoek Complex of Ny Friesland (Upper Hecla Hoek: Harland & Wilson 1956).

See Hecla Hoek, Upper Group.

A.A.Krasil'shnikov

HOLMESLETTFJELLA BEDS

(C. Wilson in Harland 1960)

See Holmeslettfjella Formation.

A.A.Krasil'shnikov

HOLMESLETTFJELLA FORMATION ("FORMACIJA")

(Harland et al. 1979)

Lt. Ordovician - E. Silurian

Named from a mountain on the southern coast of St. Jonsfjorden.

Oscar II Land to the north and south of St. Jonsfjorden. Calcareous siltstones, argillites and polymict conglomerates with limestone inclusions occur; the latter contain Late Ordovician to Early Silurian fossils. The total thickness is 500 m. It has been distinguished by Harland et al. (1979) as the upper part of the Bullbreen Group, though its structural and stratigraphical position is not clear.

A.A.Krasil'shnikov, S.I.Turčenko

HORNES(ET) FORMATION ("FORMACIJA")

(Harland et al. 1979)

Cambrian - E. Ordovician

Named from a point on the southwestern coast of Prins Karls Forland.

Developed in the stratotype area. This is the third formation from below of the Peachflya Group. Both boundaries are conformable. The bulk of the formation is composed of dark cherty phyllites with quartzitic sandstone intercalations and lenses (up to 4 m); in the lower part of the succession three limestone horizons (up to 40 m) occur. No fossils are found. The total thickness of the formation is 350 m.

A.A.Krasil'shnikov

HORNSTULLODDEN FORMATION (MEMBER, "TOLŠČA", "FORMACIJA")

(H. Formation: Major & Winsnes 1955, H. "Tolšča": Krasil'shnikov 1973)

E. Ordovician

Named from a point on the southern coast of Hornsund.

Sørkapp Land and Wedel Jarlsberg land. This is the lower formation of the Gråkallen Series. It consists of two divisions: the lower quartzites and dolomitic sandstones (up to 300 m), and the upper light limestones (up to 400 m) with Early Ordovician gastropods. It lies with a stratigraphical unconformity upon Cambrian deposits of the Slakli Series. There is a transitional boundary with the overlying limestones of the Nigerbreen "Tolšča".

The lower division is a stratigraphical equivalent of the Wiederfjellet "Svita". The upper one obviously corresponds to the Lyciapynten and Dusken "svita"s.

A.A.Krasil'shchikov

HORNSUND SUPERGROUP ("NADGRUPPA")

Cambrian - Ordovician

(Birkenmajer 1975)

Named from a bay in southwestern Spitsbergen.

Southwestern part of Spitsbergen. It collects Cambrian (Sofiekammen "Serija") and Ordovician (Sørkapp Land "Serija") mainly carbonate deposits. The total thickness of the group is 2200-2600 m.

A.M.Teben'kov

HORNSUNDTIND LIMESTONE FORMATION ("FORMACIJA")

E. Ordovician

(Birkenmajer 1975, 1978b)

See Hornsundtind Formation.

A.A.Krasil'shchikov

HORNSUNDTIND "SVITA"* (FORMATION)

E. Ordovician

(Birkenmajer 1975, 1978b)

From the highest peak of Sørkapp Land and all the southern Spitsbergen.

Sørkapp Land and Wedel Jarlsberg Land. It is the upper limestone formation of the Sørkapp Land "Serija". The lower boundary (with the Dusken and Nigerbreen Limestones) is conformable. The overlying deposits (Devonian and younger) have a structural unconformity at their base. The correlation with shaley Arkfjellet Series is not clear. There are massive limestones, pinky and brown in the lower part (Rasstupet "Tolšča") and grey to black in the upper part (Tsjebysjovfjellet "Tolšča"). The thickness is about 500 m. There are Early Ordovician (Late Canadian) ostracods, brachiopods, nautiloids and bryozoans.

A.M.Teben'kov

* First introduced as "svita" rank here.

HUNNBERG(ET) SERIES

(Kulling 1934)

See Hunnberg "Svita".

A.A.Krasil'shchikov

HUNNBERG(ET) "SVITA" (FORMATION)

Lt. Riphean

(Krasil'shchikov 1965, 1973; Flood et al. 1969; H. Series: Kulling 1934)

Named from a mountain on the northern coast of Murchisonfjorden.

Western Nordaustlandet. It is the middle "svita" of the upper "podserija" of the Murchison-Bay "Serija". It overlies the Sälodd(en) "Svita" with a transitional boundary and is conformably, but with a sharp boundary overlain by the dolomites of the Ryssø Formation. Dark grey, coal-bearing limestones with a various complex of Late Riphean stromatolites and microphytolites occur. The thickness is 200-335 m.

A.M.Teben'kov

HÖFERPYNTEN DOLOMITE FORMATION

(Birkenmajer 1972)

See Höferpynten "Svita".

A.M.Teben'kov

HÖFERPYNTEN SERIES

(Major & Winsnes 1955; H. Series (Group): Major et al. 1956)

See Höferpynten "Svita".

A.M.Teben'kov

HÖFERPYNTEN "SVITA" (FORMATION)

Lt. Riphean

(Krasil'shchikov 1973, Birkenmajer 1975)

Named from a promontory on the southern coast of Hornsund.

Western coast of Spitsbergen between Hornsund and Engelsbukta. It is the middle* formation of the Sofiebogen "Serija". Both boundaries of the H. "Svita"*** are lithologically sharp, possibly erosive. There are alternating units of dolomites (sometimes with cherts) and limestones with Middle to Late Riphean microphytolites and rarely stromatolites. Within the formation's type sections on both sides of Hornsund Birkenmajer (1972) distinguished 4 conformable divisions, their total thickness being 930 m. According to other data the thickness of the H. "Svita" is estimated to 120-170 m (Birkenmajer 1975) and 100-300 m (Krasil'shchikov 1973; Krasil'shchikov & Kovaleva 1976). On the same side, in the Hornsund area at the boundary of the Höferpynten and Gåshamna "svita"s, there is a gritstone horizon (40-60 m) attributed by Krasil'shchikov & Kovaleva (1976) to the base of the H. "Svita" (the lower "podsvita"); the middle and upper "podsvita"s are carbonates.

A.A.Krasil'shchikov

* Krasil'shchikov & Kovaleva (1976) supposing a twofold division of the Sofiebogen "Serija" regard the Höferpynten "Svita" as the upper one.

** With Slyngfjellet and Gåshamna formations, both in the case of inverted bedding (Birkenmajer 1958, 1975) and of a normal stratigraphical succession (Krasil'shchikov & Kovaleva 1976).

HÖFERPYNTEN UNIT

(Harland 1978)

See Höferpynten "Svita".

A.A.Krasil'shchikov

I

INNVIKHØGDA FORMATION ("FORMACIJA")

Lt. Proterozoic

(Ohta 1982)

Named from an inlet south of Duvefjorden, Nordaustlandet.

Widely distributed on northern Nordaustlandet. This is the upper part of the Austfonna Formation (Group), conformably resting upon the sandy-argillaceous Djeveflota Formation and unconformably (?) overlain by quartzites of the Persberget Formation. Rocks are argillites intercalated with limestones. The thickness is 250-465 m.

A.A.Krasil'shchikov

ISACHSEN FORMATION ("FORMACIJA")

Lt. Proterozoic

(Harland et al. 1979)

Named from a mountain (Isachsenfjellet)* on southern Prins Karls Forland.

Developed in the stratotype region. This is the lower formation of the Ferrier Group. The base of the succession is unknown. The upper contact is conformable. It is composed of dark green biotite schists with some 1 m thick bands of volcanic (tuffous) material. The exposed thickness is 150 m.

A.A.Krasil'shchikov

* the editor

ISBJØRNHAMNA FORMATION ("SVITA")

(Birkenmajer 1958, Krasil'shchikov 1973)

See Isbjørnhamna "Serija".

A.M.Teben'kov

ISBJØRNHAMNA GROUP

(Birkenmajer 1975)

See Isbjørnhamna "Serija".

A.M.Teben'kov

ISBJØRNHAMNA "SERIJA" (GROUP)

Lt. Proterozoic

(Krasil'shchikov & Kovaleva 1976)

Named from a bay on the northern coast of Hornsund.

It occurs locally in the stratotype region to the north of Hornsund. The bulk of the series are garnet-mica schists and, in the middle part, marble and calcareous divisions. It is correspondingly divided into 3 formations: Skoddefjellet, Arikammen and Revdalen fms. The total thickness is more than 1500 m. The common amphibolite facies metamorphism has been the reason for gathering the entire rock complex within one series; metamorphism is of considerably higher grade than the greenschist metamorphism of the overlying units, among which the rocks of the I. "Serija" appear in a tectonic window. The base of the succession is not exposed. The contact with the overlying sedimentary-volcanic Werenskioldbreen "Serija" is tectonic (caused by thrusting).

A.M.Teben'kov

K**KAGGEN FORMATION ("FORMACIJA")**

Ordovician ?

(Harland et al. 1979)

Named from a nunatak in central Prins Karls Forland.

Developed in the stratotype area; the middle formation of Scotia Group. It lies conformably between the Baklia (underlying) and Roysha(ugen) formations. There are green, reddish-brown and grey slates, as well as quartzite bands downwards increasing in number. No fossils are found. The thickness is about 300 m.

A.A.Krasil'shchikov

KAPP HANSTEEN FORMATION ("SVITA")

E. Riphean

(Kullig 1934; Flood et al. 1969; the lower member of the Kapp Hansteen "Serija": Krasil'shchikov 1973, 1976; the upper group of the Botnia Supergroup: Lauritzen & Ohta 1984)

Named from a synonymous point in northwestern Nordaustlandet.

Western and central Nordaustlandet. It lies with a structural unconformity upon metamorphic rocks of the Duvefjorden "Kompleks" and is conformably overlain by the sandy-slaty Brennevinsfjorden Formation. There are lavas and tuffs of andesitic and liparitic porphyres, partly having an ignimbritic or agglomeratic texture. There are nappes of andesites and liparites, as well as flat bodies and stocks of liparitic (quartz) porphyry. In the central part of Nordaustlandet metadiabases and phyllitized liparites (rhyolites) are prevailing. Metamorphism is of greenschist facies. The thickness is 3500 - 5000 m. No fossils. Radiometric Rb-Sr dating of liparite porphyres shows 766±87Ma (Gorochoy, Krasil'shchikov et al. 1977). The stratigraphical position of the volcanic Kapp Hansteen Formation cannot be considered to be clear yet. Until recently it was looked upon as the lower division of the stratified Late Proterozoic succession of Nordaustlandet (Kullig 1934, Flood et al. 1969, Krasil'shchikov 1973). Some years ago, Norwegian geologists (Ohta 1982, Ohta & Lauritzen 1984) distinguished one more sandy-slaty unit (see Brennevinsfjorden Formation) underlying the Kapp Hansteen volcanites directly over paragneisses.

A.A.Krasil'shchikov, A.M.Teben'kov

KAPP HANSTEEN "SERIJA"

E. Riphean

(Krasil'shchikov 1965, 1973)

See Botniahalvøya Group; the name 'Kapp Hansteen' is preserved for the volcanic formation of the "serija".

A.A.Krasil'shchikov

KAPP-HANSTEEN, LOWER "TOLŠČA", (MEMBER)

E. Riphean

(Krasil'shchikov 1973)

See Kapp Hansteen Formation.

A.M.Teben'kov

KAPP HANSTEEN, UPPER "TOLŠČA" (MEMBER)

E. Riphean

(Krasil'shchikov 1973)

See Brennevinsfjorden Formation.

A.M.Teben'kov

KAPP LINNE "SVITA" (FORMATION)
(Krasil'shikov 1973, after Hjelle 1962)
See Kapp Linne "Tolšča".
A.A.Krasil'shikov

Vendian

KAPP LINNE "TOLŠČA" (UNIT)
(Krasil'shikov & Kovaleva 1976)

Vendian

Named from a point near the southern entrance of Isfjorden (Hjelle 1962).

Western Nordenskiöld Land. The rocks are phyllites with coarse clastic horizons and spread dolomite, quartzite and granitoid boulders. The suggested thickness is 300 m. The boundaries are not described. It is correlatable with Vendian conglomerate units of other regions of the archipelago. According to Krasil'shikov & Kovaleva, it is a part of the Vendian Bellsund "Serija".

A.A.Krasil'shikov

KAPP LORD FORMATION ("SVITA")
(Flood et al. 1969)

M. Riphean

Named from a point on the northwestern coast of Nordaustlandet.

Western and central Nordaustlandet. This is the third formation from below of the Murchison Bay "Serija". It lies conformably between the Westmanbukta and Flora(berget) formations. Alternating coloured mudstones, light quartzites and dark limestones occur. In the latter Middle Riphean microphytolites are found. The thickness is about 1000 m.

A.M.Teben'kov

KAPP LYELL UNIT ("TOLŠČA")
(Krasil'shikov & Kovaleva 1976, Harland 1978)

Vendian

Named from a point near the southern mouth of Bellsund.

Developed most completely to the south of Bellsund. This is the upper (?) unit of the Vendian carbonate-clastic Bellsund "Serija". At the base of the unit a stratigraphical unconformity is suggested. There are slaty conglomerates with a strongly variable amount of dolomite boulders (5-40 %). The thickness exceeds 500 m, according to Harland 2000 m.

A.A.Krasil'shikov

KAPP MARTIN CONGLOMERATE BEDS ("SLOI")
(Hjelle 1969)

Riphean

These are quartz conglomerates corresponding to the Slyngfjellet Conglomerates member (see below).

S.I.Turčenko

KAPP MARTIN CONGLOMERATE DIVISION ("PAČKA")
(Harland 1978)

Riphean

Named from a point to the north of Bellsund.

Developed in the stratotype area. This is the lower division of the Lågneshukta Unit. The boundaries are not described. There are conglomerates with carbonate matrix alternating with black pisolite limestones and black phyllites; clasts are represented by dolomite (50%), quartzite (35%), limestone (10%) and green slate (5%). The thickness is 800 m.

A.A.Krasil'shikov

KAPP MARTIN DOLOMITE DIVISION ("PAČKA")
(Harland 1978)

Riphean?

From Kapp Martin, forming the northern boundary of the entrance of Bellsund.

Developed in the stratotype area; the second unit from below of the Lågneshukta Unit. The boundaries are not described. There are light laminated dolomites with bands of green slates. The thickness is 600 m.

A.A.Krasil'shikov

KAPP PLATEN FORMATION ("FORMACIJA")

E.- M. Riphean(?)

(Flood et al. 1969)

Named from a point on the northern coast of Nordaustlandet.

A lithological and stratigraphical equivalent of the Austfonna Formation (see above). The term is superfluous.

A.A.Krasil'shchikov

KAPP SPARRE FORMATION ("SVITA")

Cambrian

(Krasil'shchikov 1965, Kullig 1934)

From Sparre point (Sparreneset) near the southern entrance of Murchisonfjorden.

Developed only in the area around the point itself, and possibly on the near-by islands in Hinlopenstretet. This is the uppermost formation of the Hecla-Hoek Complex of Nordaustlandet. It lies conformably, but with a sharp boundary upon dark argillites of the Vendian Klackbergbukta "Svita". The upper beds of the succession are not exposed. The K.S. Formation is divided into two 'subformations': a lower one (45 m) of massive, white quartzitic sandstones, and an upper one (150-160 m) of dark dolomites, alternating in the upper part of the succession with dolomitic argillites. The thickness is about 200 m. Within the dolomite argillites occur imprints of badly preserved inarticulate brachiopods of presumably Cambrian age.

A.M.Teben'kov

KINGBREEN FORMATION ("SVITA")

*Lt. Riphean

(Harland et al. 1966, Krasil'shchikov 1973*)

Named from a glacier in central Ny Friesland.

Ny Friesland Peninsula, Veteranen Glacier (middle part) and Faksevangen. This is the second formation from below of the Veteranen Group. It lies conformably upon coloured quartzites of the Kortbreen Formation and is conformably, though with a sharp boundary, overlain by light quartzites of the Glasgobreen Formation. It is characterized by lithological diversity and is divided into 3 'subformations': the lower Galoistoppen Beds, composed of greywackes and shales; the middle Bogen "podsvita", essentially carbonate rocks; and the upper Cavendishryggen "Podsvita", consisting of quartzites. The thickness is 1200-1600 m. Within the carbonate rocks occur *Inseria* sp. stromatolites and Late Riphean microphytolites (Raaben & Zabrodin 1969).

A.A.Krasil'shchikov

KIRTONRYGGEN DOLOMITES

E. Ordovician

(Gobbet & Wilson 1960)

Distinguished within the Lower Oslobreen Limestone.

See Oslobreen Dolomite Division.

A.A.Krasil'shchikov

KIRTONRYGGEN FORMATION ("SVITA")

E.- M(?) Ordovician

(Harland et al. 1966, Krasil'shchikov 1970, 1973)

Named from a ridge in southeastern Ny Friesland.

Oslobreen area and the northwestern coast of Hinlopenstretet. This is the upper formation of the Oslobreen Series (in the stratotype area). It lies conformably upon Cambrian dolomites of the Tokammane Formation and is in the stratotype area overlain by Carboniferous deposits with a structural unconformity. In northern Ny Friesland it is conformably, but with a sharp boundary overlain by the Middle Ordovician Valhallfonna Formation (Vallance & Fortey 1968). The bulk of the formation consists of limestones, while dolomites occur in the middle part. It is divided into 4 units: lower limestones, dolomites, middle limestones and upper limestones. The total thickness is 750-960 m.

A.A.Krasil'shchikov

KLACKBERGBUKTA "SVITA" (FORMATION)

Vendian (?)

(Krasil'shchikov 1967)

Named from an inlet on the southern side of Murchisonfjorden.

Western Nordaustlandet. This is the upper formation of the Gotia Series. It lies without any obvious indication of an unconformity, but with sharp boundaries between the Vendian Sveanor Formation and the Cambrian Kapp Sparre Formation. There are dark argillo-silty dolomites and calcareous argillites. At the base a 10 m thick bed

of yellow dolomites occurs, and on top a 3 m thick sandstone bed with dolomite cement. The thickness is 250-285 m. No fossils.

A.A.Krasil'shchikov

KLACKBERGET FORMATION

Vendian

(Harland 1985)

See Klackbergbukta "Svita".

A.A.Krasil'shchikov

KNIVODDEN FORMATION ("FORMACIJA")

E. Ordovician

(Harland et al. 1979)

Named from a promontory on the western coast of central Prins Karls Forland.

Developed in the stratotype area; the upper formation of the Peachflya Group. It lies conformably upon the phyllitic Hornnes Formation, while the upper boundary is tectonic. It is composed of phyllites, in places with chloritoid. On its top cherty varieties, from dark-grey to black, occur. The contents of sandy material within the rocks increases downwards in the succession. No fossils are found. The thickness is 400 m.

A.A.Krasil'shchikov

KOLLERBREEN "SVITA" (FORMATION)

E. Proterozoic

(Abakumov 1976)

Named from a glacier in northwestern Spitsbergen.

Hakon VII Land. It is distinguished as the upper (?), essentially aluminiferous part of the Smeerenburgfjorden "Serija". The boundaries with the underlying (?) Waggonwaybreen "Svita" and with the overlying Krossfjorden "Serija" are tectonic, the latter locally being obscured by superimposed migmatization processes. There occur biotite and highly aluminiferous gneisses and plagiogneisses, migmatites, syngenetic granitoids and marble horizons. The suggested thickness is 6000 -7000 m.

S.A.Abakumov

KONGLOMERATFJELLET CALCAREOUS BEDS ("SLOI")

Riphean

(Hjelle 1969)

It is a local lithological division. There occur grey limestones with dolomite horizons and spread quartzite pebbles (?); the thickness is 150 m. Hjelle (1969) correlates it with the Höferpynten Formation (see above).

S.I.Turčenko

KONGLOMERATFJELLET CONGLOMERATE BEDS ("SLOI")

Riphean

(Hjelle 1969)

See Konglomeratfjellet Unit.

S.I.Turčenko

KONGLOMERATFJELLET SHALE AND QUARTZITE BEDS ("SLOI")

Riphean

(Hjelle 1969)

It is a local lithological division. There are grey phyllites, alternating with light quartzites. The thickness is unknown. Hjelle correlates it (1969) with the lower part of the Gåshamna "Svita" (see above).

S.I.Turčenko

KONGLOMERATFJELLET UNIT ("TOLŠČA")

Riphean

(Harland 1978)

Named from a mountain in central Wedel Jarlsberg Land.

There occur quartzite conglomerates, calcareous sandstones and siltstones, mainly in the upper part of the unit. The thickness is tentatively estimated to 1000 m. It is comparable with the conglomeratic Slyngfjellet Member (Hjelle 1969) or with the Deilegga Formation (Harland 1978).

A.A.Krasil'shchikov, S.I.Turčenko

KONGLOMERATFJELLET VOLCANIC BEDS ("SLOI")**Riphean**

(Hjelle 1969)

This is a local lithological division of insignificant thickness (up to 10 m). There occur green slates of volcanic origin. Hjelle (1969) correlates them with the lower part of the Gåshamna Formation (see above), but it is most probable that they are part of the essentially volcanic Chamberlindalen Member (see Ch.)

S.I.Turčenko

KONGSVEGEN GROUP ("GRUPPA")**Lt. Proterozoic (early part)**

(Harland et al. 1966)

Named from a glacier in the inner part of Kongsfjorden.

The group unites the metamorphic rocks of Brøggerhalvøya. These are mica, garnet-mica schists and quartzites; in the middle part occur recrystallized dolomites and marbles. It is divided into 3 formations having tectonic boundaries: the Bøgegga, Steenfjellet, and Nielsenfjellet formations. Some scientists (C. Wilson in: Harland 1960; Barbaroux 1966) suggested the succession to be inverted. The metamorphic degree is greenschist facies to lower amphibolite facies. The thickness of the group is estimated between 2500-4300 m. The Müllerneset Formation has later been included into the K. Group (Harland et al. 1979), which is distinguished to the south of Brøggerhalvøya and correlated with the Nielsenfjellet Formation (see below).

A.A.Krasil'shnikov, S.I.Turčenko

KORTBREEN FORMATION ("SVITA")***M.- L.(?) Riphean**

(Harland et al. 1966, Krasil'shnikov 1973*)

Named from a glacier in central Ny Friesland.

Ny Friesland: Veteranen glacier, Faksevågen, Sorgfjorden. The formation lies conformably (?) on the phyllites of the Mossel "Serija" and is conformably overlain by greywackes of the Kingbreen Formation. In the Sorgfjorden area one can suggest (Harland & Wilson 1956) transitional beds between the K. Formation and the Vildadalen Formation of the Mossel "Serija"; the boundaries are in most cases tectonic. The lower part of the formation (lower "podsvita") is essentially carbonate, while the upper part (upper "podsvita") is quartzite. The total thickness is 900-1200 m. No determinable fossils.

A.A.Krasil'shnikov

(KORTBREEN) LIMESTONE DIVISION

(Harland et al. 1966)

See Kortbreen, Lower "Podsvita".

A.A.Krasil'shnikov

KORTBREEN, LOWER "PODSVITA" ('SUBFORMATION')**M. Riphean**

(Krasil'shnikov 1973)

Ny Friesland, from Sorgfjorden in the north to the uppermost part of the Veteranen glacier. The lower boundary is mostly tectonic, and only in the Sorgfjorden area some transitional beds of alternating phyllitized schists and dolomitic quartz sandstones are described (Wilson 1958). The upper boundary is conformable. In the succession occur alternating dark grey limestones, dolomites, shales and platy quartzitic sandstones; the thickness varies between 10 and 350 m. In the limestones poorly preserved microphytolites occur. The rocks correspond to the Limestone Division of the British scheme (Harland et al. 1966).

A.A.Krasil'shnikov

KORTBREEN, UPPER "PODSVITA" ('SUBFORMATION')**M.(?) Riphean**

(Krasil'shnikov 1973)

Ny Friesland Peninsula, Veteranen glacier (middle part). It lies conformably between the clastic carbonate lower 'subformation' and greywackes of the Kingbreen Formation. Massive coloured quartzites occur. The thickness attains 900 m. No fossils. It corresponds to the Quartzite Division of the British Scheme (Harland et al. 1966)

A.A.Krasil'shnikov

(KORTBREEN) QUARTZITE DIVISION

(Harland et al. 1966)

See Kortbreen, Upper "Podsvita".

A.A.Krasil'shchikov

KROSSFJORDEN "SERIJA" (GROUP)

Lt. Proterozoic

(Abakumov 1976)

Named from a fjord in northwestern Spitsbergen.

Southwestern Hakon VII Land and Mitrahallvøya. It unites relatively weakly metamorphosed rocks overlying the Granitic Gneiss Complex (Smeerenburgfjorden "Serija") of northwestern Spitsbergen. The relation to the underlying Smerenburgfjorden "Serija" is obscured by the superimposed Caledonian metamorphism. The upper boundary is not exposed. The lower part (Nissenfjella Formation) consists mainly of plagiogneisses with thin amphibolite bands; the middle part (Signehamna Formation) is composed of garnet mica schists with quartzite bands; the upper part (Generalfjella Formation) consists of marbles, mica schists and quartzites. The total thickness is about 7500 m. The metamorphic degree increases downwards within the succession from greenschist to epidote-amphibolite facies.

S.A.Abakumov

KVIVEODDEN DIVISION* ("PAČKA")

M.- Lt. Riphean

(Harland 1978)

Named from a point on the southwestern coast of Hornsund.

Developed in the stratotype area. In the scheme of Harland it represents the lower division of the Höferpynten "Svita". The boundaries are tectonic (?). It is composed of silicified quartzitic/dolomitic conglomerates (intraformational, according to Harland) in the lower part, and with dolomite clasts in the upper part. The total thickness is 30 m. On the southern coast of Hornsund it unites the deposits that earlier were attributed by Birkenmajer (1972) to the Slyngfjellet and Fannytoppen members (the lower and upper parts, respectively).

A.A.Krasil'shchikov

* there is a misprint in Harland (1978): instead of 'Kniveodden' it should be 'Kviveodden' according to the 1:100,000 map issued by Norsk Polarinstitut in 1984.

L

LEMSTRÖMFJELLET GNEISSES

(Harland & Wilson 1956)

See Lemströmfjellet Member.

S.A.Abakumov

LEMSTRÖMFJELLET MEMBER ("SUBFORMACIJA")

E. Proterozoic

(Harland et al. 1966)

From the mountain Lemströmfjellet in southwestern Ny Friesland.

Occurs in the stratotype area. This is the third member from below of the Eskolabreen Formation. It lies conformably between mica-plagiogneisses of the underlying and massive "feldspathites" of the overlying member. There occur coarse-grained, feldspathized plagiogneisses, alternating with amphibolites. The thickness is 700 m.

S.A.Abakumov

LIEFDEFJORDEN MARBLES AND SCHISTS

(Harland 1960, Harland et al. 1966)

See Liefdefjorden Series.

S.A.Abakumov

LIEFDEFJORDEN SERIES ("SERIJA")

Proterozoic

(Harland 1960)

Named from a fjord in northern Svalbard.

This is the second member from below of the metamorphic complex of Hakon VII Land. The boundaries are not exposed. There occur quartz-mica, in places graphitic, schists (lower part) and calcitic and dolomitic marbles (upper part). Metamorphism ranges from greenschist facies to lower amphibolite facies. The total thickness exceeds 4000 m. It may be correlated with the Generalfjella Formation in the Krossfjorden area (Gee & Hjelle 1966), or with the upper part of the Finnlandveggen Group in Ny Friesland (Harland et al. 1966).

S.A.Abakumov

LINNEFJELLA "SVITA" (FORMATION)

Riphean

(Krasil'shikov 1973, after Hjelle 1962)

Named from a mountain massif in northwestern Nordenskiöld Land.

Developed in the stratotype area. Its stratigraphical position is not clear. Both boundaries are tectonic. There occur green and reddish-brown phyllitic slates with bands of quartzites, dolomites and limestones; the thickness is 1000-1500 m.

A.A.Krasil'shikov

LOMFJORDEN "SERIJA" (SUPERGROUP)

Lt. Proterozoic (M.- Lt. Riphean)

(Krasil'shikov 1970, 1973, after Harland et al. 1966)

Named from a fjord in northeastern Spitsbergen.

Ny Friesland and Olaf V Land. It lies conformably (?) upon phyllites of the Mossel Series (Early Riphean?) and is overlain by the Vendian Polarisbreen Series with some indication of an erosive boundary. The Lomfjorden Series represents a transgressive succession from mainly quartz sandstones through silty argillaceous and argillo-carbonate deposits (Veteranen Group) to limestones and dolomites (Akademikerbreen Group); the thickness of the "serija" is about 7000 m. Upper Riphean stromatolites and microphytolites are found 2000 m above the base of the series and upwards through the whole succession. (Raaben & Zabrodin 1969). Generally, it corresponds to the Lomfjorden Supergroup (see above) of the British scheme (Harland et al. 1966).

A.A.Krasil'shikov

LOMFJORDEN SUPERGROUP ("NADGRUPPA")

Lt. Proterozoic

(Harland et al. 1966)

Named from a fjord in northeastern Spitsbergen.

The middle part of the Hecla Hoek Complex in Ny Friesland (Middle Hecla Hoek: Harland & Wilson 1956). Its rank was later changed to supergroup (Harland et al. 1966).

See Lomfjorden "Serija".

A.A.Krasil'shikov

LUCIAPYNTEN DOLOMITE FORMATION

E. Ordovician ?

(Birkenmajer 1975, 1978b)

See Luciapynten "Svita".

A.M.Teben'kov

LUCIAPYNTEN DOLOMITES

E. Ordovician ?

(Birkenmajer 1959)

See Luciapynten "Svita".

A.M.Teben'kov

LUCIAPYNTEN "SVITA"* (FORMATION)

E. Ordovician ?

(L. Dolomite Formation: Birkenmajer 1975, 1978b)

Named from a promontory on the northern side of Hornsund (Birkenmajer 1959).

Developed both to the north and south of Hornsund. It is the second formation from below of the Sørkapp Land Series. It has transitional boundaries with under- and overlying deposits of the Wiedersfjellet and Dusken formations. Massive dolomites with chert inclusions and dolomite breccias occur. The thickness is decreasing in N-S direction from 400 to 100 m. No fossils are found.

A.M.Teben'kov

* First introduced as "svita" rank here.

LYELLSTRANDA DIVISION ("PAČKA")

Vendian

(Harland 1978)

Named from a littoral valley near the southern entrance of Bellsund.

Within the stratotype area this unit is distinguished as the upper division of the Kapp-Lyell Unit (see above). There are no overlying deposits in the region. Downwards along the succession it is gradually passing over into the lower Renardbreen Conglomerate Division. It is composed of quartzitic sandstones and conglomerates. There are also clastic dolomites, limestones and quartzites. No thickness data are available.

A.A.Krasil'shchikov

LØVLIEBREEN FORMATION ("FORMACIJA")

L.? Riphean

(Harland et al. 1979)

Named from a glacier on the southern side of St. Jonsfjorden, Spitsbergen.

Occurs in western Oscar II Land. The quartzite-vulcanite L. formation is in its upper part represented by massive dark quartzites, alternating with dark schists; the lower part is mainly composed of green and dark red, metavolcanic slates. The total thickness is 1000 m. The base of the succession is not exposed; it is conformably overlain by the Alkhorn(et) limestone formation.

A.A.Krasil'shchikov, S.I.Turčenko

LÅGNESBUKTA UNIT ("TOLŠČA")

Riphean - Vendian

(Harland 1978)

Named from a bay on the north of Bellsund.

Harland (1978) collected under this name Late Precambrian deposits of different age and lithology from the northwestern coast of Bellsund. It includes vulcanites, tilloids, limestones and dolomites, as well as conglomerates. The total thickness is estimated to 3-4000 m.

A.A.Krasil'shchikov

LÅGNESET - KAPP MARTIN GREY AND GREEN SHALES

Riphean - Vendian

(Hjelle 1969)

A local lithological division of insignificant thickness. According to Hjelle (1969), it underlies the Lågneset Tillite on the northern coast of Bellsund. It has no regional stratigraphical significance.

A.A.Krasil'shchikov

LÅGNESET TILLITE

Vendian

(Hjelle 1969)

See Lågneset Tilloid Division.

A.A.Krasil'shchikov

LÅGNESET TILLOID DIVISION ("PAČKA")

Vendian

(Harland 1978)

Named from a point near the northern entrance of Bellsund.

In Harland's (1978) scheme this is the second from above division of the Lågnesbukta Unit. It shows a transitional boundary with the overlying Diabaspynten Division. The lower boundary is not described. There occur sandy phyllites with spread quartzite, limestone and dolomite pebbles. The thickness is 150-250 m. It may be correlated with Vendian "tillite" units of the Spitsbergen west coast.

A.A.Krasil'shchikov

LÅGNESFLYA "SVITA" (FORMATION)

Riphean

(Krasil'shchikov 1973, after Hjelle 1962)

Named from a littoral plain in western Nordenskiöld Land.

Developed in the stratotype area. Dolomites are alternating with limestones, lenses and beds of chert, phyllites and quartzite bands. The thickness is 400 m. Probable stratigraphical equivalents are the Lågnesrabbane Calcareous Division (see below) and the Höferpynten "Svita" (see above).

A.A.Krasil'shchikov

LÅGNESRABBANE CALCAREOUS BEDS
(Hjelle 1969)

Riphean - Vendian

See Lågnesarabbane Calcareous Division. They may be correlated to the Höferpynten "Svita".
S.I.Turčenko

LÅGNESRABBANE CALCAREOUS DIVISION ("PAČKA")
(Harland 1978)

Riphean - Vendian

Named from low hills in southwestern Nordenskiöld Land.

Occurrence to the north and south of Bellsund is supposed. In Harland's (1978) scheme, it is the middle division of the Lågnessbukta Unit. Laminated, grey limestones with bands of grey calcareous phyllites and white marbles occur. The thickness is 1000-2000 m.

S.I.Turčenko

M

MAGDALENEFJORDEN GNEISSES
(Harland 1960)

Proterozoic

Named from a fjord in the northwest of Spitsbergen.

A gneiss unit, distinguished at the base (?) of the metamorphic complex of Spitsbergen. The boundaries are not exposed and the thickness is unknown. It has been correlated with the Finnlandveggen Group of Ny Friesland (Harland 1960). It has never been considered as an independent subdivision since.

A.A.Krasil'shchikov

MAGNETHØGDA UNIT ("TOLŠČA")
(Harland 1978)

Proterozoic

Named from a mountain ridge in northern Wedel Jarlsberg Land.

Occurs only in the stratotype area. The rocks are metapsammites and marbles including some beds of acid feldspathites and amphibolites. The approximate thickness exceeds 1000 m. The boundaries are not exposed. The stratigraphical position is not clear. According to its metamorphism grade (amphibolite facies), it may be the oldest of the Precambrian units in the area and correlate to the Isbjørnhamna "Serija" of Hornsund.

A.A.Krasil'shchikov

MALMGRENFJELLET MEMBER ("SUBFORMACIJA")
(Harland et al. 1966)

E. Proterozoic

Southwestern Ny Friesland. This is the second member from below of the Eskolabreen Formation. It lies conformably between layers of feldspathized plagiogneisses. It consists of coarse-grained mica-plagiogneisses with some marble horizons. The thickness is 100-200 m.

S.A.Abakumov

MALMGRENFJELLET "SVITA"
(Abakumov 1965)

E. Proterozoic

From the mountain Malmgrenfjellet in southwestern Ny Friesland.

The lower formation of the Finnlandveggen Group. As to its extent, it corresponds to the earlier defined (Harland & Wilson 1956) Eskolabreen Formation (see above).

S.A.Abakumov, A.A.Krasil'shchikov

METAMORPHIC "KOMPLEKS" (COMPLEX) (NORDAUSTLANDET)
(Krasil'shchikov 1973)

E. Proterozoic

See Duvefjorden "Kompleks".

A.M.Teben'kov

MEYERBUKTA GROUP ("GRUPPA")
(Ohta 1982)

Lt. Proterozoic

Named from a bay in the north of the island Lågoya, near Noraustlandet.

Lågøya and southern coast of Franklinsundet. This is the lower group of the Murchisonfjorden Supergroup (see: Murchison Bay "Serija"). It lies with an erosive contact on volcanic rocks of the Kapp Hansteen Group and is overlain, probably with an erosive boundary, by the lower, mainly quartzitic sandstone of the Persberget Formation, Franklinsundet Group. The larger part of the group is composed of dark grey carbonate shales. In the lower part of the succession fine-grained sandstone and limestone intercalations are present; the latter are also noticeable in the upper parts of the succession. The thickness of the group is 1400 m. No fossils are found. It is stratigraphically equivalent to the Austfonna Group (see A. Fm.) in eastern regions of Nordaustlandet.

A.A.Krasil'shchikov

MIDIFJELLET MEMBER ("TOLŠČA")

E. Cambrian

(Birkenmajer 1978a)

Named from a mountain in northern Sørkapp Land.

Northern Sørkapp Land and southern Wedel Jarlsberg Land. The lower and upper boundaries are conformable and lithologically prominent. Grey and black limestones occur, which often are recrystallized and slaty. The thickness is 20-55 m. Undeterminable trilobite remains are found.

A.M.Teben'kov

MIDTERHUKEN UNIT ("TOLŠČA")

Lt. Proterozoic

(Harland 1978)

Named from a point on the western end of Nathorst Land.

The M. Unit joins all the deposits composing the mountains of Midterhuken to the west of the Early Carboniferous exposures. The bulk of the unit consists of well laminated marbles (calcareous and dolomitic) going over into calcareous phyllites. The thickness is more than 1000 m. The stratigraphical position is not clear.

A.A.Krasil'shchikov

MIGMATITES AND SYNOROGENIC GRANITES (NORDAUSTLANDET)

(Flood et al. 1969)

See Duvefjorden "Kompleks".

A.A.Krasil'shchikov

MILLARODDEN TILLOID UNIT ("TOLŠČA")

Vendian

(Harland 1978)

Named from a cape on the northeastern coast of Bellsund.

This unit is composed of tilloidal conglomerates with a large quantity of dolomite and, less frequent, limestone and quartzite boulders. In the lower (?) part of the unit detrital limestones with spread dolomite boulders are prevailing. The total thickness is up to 500 m. The unit has a transitional boundary with the limestones of the Vårsolbukta Unit, but the stratigraphical succession is not clear, as it is supposed to be overturned (Harland 1978). It is overlain by Early Carboniferous deposits with a structural disconformity. It may be correlated with the Vendian tillite formations of the Spitsbergen west coast.

A.A.Krasil'shchikov

MOEFJELLET FORMATION ("FORMACIJA")

M.? Riphean

(Harland et al. 1979)

Named from a mountain in the inner part of the Comfortlessbreen glacier in northern Oscar II Land.

Occurs in northern Oscar II Land. The formation consists of massive grey dolomites with rare chert laminae. The thickness is not less than 800 m. It has a transitional boundary with underlying Trondheimfjella Formation. The upper boundary is tectonic. According to Challinor (1967) it is equivalent to the upper part of the Bjørvigfjellet Formation (see above).

A.A.Krasil'shchikov, S.I.Turčenko

MONT BLANC SCHISTS

E. Proterozoic

(Harland 1960, Harland et al. 1966)

From the mountain Mont Blanc in northwestern Spitsbergen.

Distinguished in the upper(?) part of the metamorphic complex of northern Haakon VII Land. The lower and upper boundaries are tectonic. Garnet mica schists, plagiogneisses, amphibolites, marbles and eclogites occur.

The thickness is not known. It is equivalent to the Solanderfjellet "Serija" (see below) that was distinguished by Abakumov (1976). It had earlier been correlated with the Harkerbreen Series of Ny Friesland (Harland 1960; Harland et al. 1966).

S.A.Abakumov

MONT SCOTIA SERIES ("GRUPPA")

Proterozoic

(Tyrrell 1924; Mont Scotia Gr.: Major et al. 1956)

Named from a mountain in central Prins Karls Forland.

Occurs in a mountain massif in central Prins Karls Forland. The series is distinguished as a member of finely laminated dark shales, limestones and quartzites. There is also a small amount of coloured mudstones. Thickness and stratigraphical position have not been defined. The total extent of the series has been estimated quite differently (Krasil'shchikov 1973; Harland et al. 1979). See also "Scotia Group" (Harland et al. 1979) and "Black Shale Formation" (Hjelle et al. 1979).

A.A.Krasil'shchikov

MOSSEL "SERIJA" (SERIES)

Lt. Proterozoic (E. Riphean ?)

(Krasil'shchikov 1973)

From the peninsula (Mosselhalvøya)* at the northern end of Ny Friesland.

Rocks of this unit form the watershed of the Ny Friesland Peninsula. The name unites relatively weakly metamorphosed rocks resting between mainly gneissic units of the Early Proterozoic Atomfjella "Serija" and non-metamorphic Middle to Late Riphean deposits of the Lomfjorden "Serija". The lower boundary is tectonic, while the boundary with the overlying Lomfjorden "Serija" is lithologically sharp, but without indications of an unconformity. The metamorphic grade increases downwards within the succession, from greenschist facies to epidote-amphibolite facies. The bulk of the series are microcrystalline garnet-mica schists and quartzites (lower part) and phyllites (upper part), respectively. Two formations are distinguished, the Flåen and Vildadalen formations (2000 m and 3400-3600 m, respectively). Stratigraphically and lithologically, the Mossel "Serija" is equivalent to the northern succession of the Planetfjella Group (Harland et al. 1966). Conventionally, the series is supposed to be of Early Riphean age, due to its stratigraphic position below deposits containing Middle Riphean microphytolites.

A.A.Krasil'shchikov

* the editor

MOTALAFJELLA FORMATION ("FORMACIJA")

Lt. Ordovician - E. Silurian

(Harland et al. 1979)

Named from a mountain massif to the south of St. Jonsfjorden.

Occurs near the stratotype. Rocks are grey massive limestones of 200 m thickness. They are resting as a tectonic nappe on highly metamorphic rocks of the Late Proterozoic Vestgötabreen Formation (see below). According to Harland et al. (1979) it represents the lower part of the Bullbreen Group (see above), but its structural and stratigraphical correlations as well as its areal distribution, are not clear.

A.A.Krasil'shchikov, S.I.Turčenko

MURCHISON BAY, LOWER "PODSERIJA" (SERIES)

M.- Lt. Riphean

(Krasil'shchikov 1970)

Northwestern and central Nordaustlandet. This is the lower, essentially clastic part of the Murchison Bay Series. It lies with an erosive, angular (?) unconformity upon volcanic and clastic rocks of the Botniahalvøya Group; it has a transitional boundary with the carbonate deposits of the upper "podserija" of the Murchison Bay "Serija". It includes (from below) the Persberget, Westmanbukta, Kapp Lord, Flora, Nordvik(a) and Raudstup(et) formations; the total thickness is 3500-4000 m. According to recent data (Ohta 1982; Ohta & Lauritzen 1984), an additional Meyerbukta Group (see above) with a thickness of 1200 m can be distinguished in the lower part of the "podserija". There are rare occurrences of Middle and Late Riphean microphytolites in the lower and upper parts of the "podserija", respectively.

A.A.Krasil'shchikov

MURCHISON BAY, UPPER "PODSERIJA" (SERIES)
(Krasil'shikov 1970)

Lt. Riphean

Northwestern Nordaustlandet. This is the upper, carbonate part of the Murchison Bay "Serija". It has a transitional boundary with the lower "podserija" and is overlain without an evident unconformity by clastic rocks of the Vendian Gotia "Serija". It includes the Sällodd(en) (silty dolomites), Hunnberg(et) (dark limestones) and Ryssö (light dolomites) formations. The total thickness is about 1200 m. It contains Late Riphean stromatolites and microphytolites.

A.M.Teben'kov

MURCHISON BAY "SERIJA" (SERIES)

M.- Lt. Riphean

(Krasil'shikov 1965, 1973; Murchison Bay Formation: Kullig 1934; Murchisonfjorden Supergroup: Flood et al. 1969)

From the original English name of Murchisonfjorden (Murchison Bay) in western Nordaustlandet.

Western and central Nordaustlandet. At the base of the "serija" an erosive, angular (?) unconformity is suggested. The upper boundary (with the Vendian Gotia "Serija") is lithologically sharp, but without indications of an unconformity. This thick, clastic-carbonate unit is lithologically divided into two "podserija"s (see Lower and Upper Murchison Bay "Podserija"). The lower one (3500-4000 m) is mainly clastic and includes the Persberget, Westmanbukta, Kapp Lord, Flora(berget), Nordvik(a) and Raudstup(et) formations. The upper "podserija" is carbonate (about 1000 m thick) and consists of three formations: Sällodd(en), Hunnberg(et) and Ryssö. In the lower "podserija" microphytolites of Middle Riphean habitus occasionally occur, while in the upper "podserija" a variety of Late Riphean stromatolites and microphytolites is found.

A.A.Krasil'shikov

MÜLLERNESET FORMATION ("FORMACIJA")

Riphean

(Harland et al. 1979)

Named from a point bordering the southern entrance to St. Jonsfjorden.

Developed along the western coast of Spitsbergen to the South of St. Jonsfjorden. Rocks are phyllites, alternating with quartzites. The total thickness is about 2000 m. Harland et al. by mistake correlated the M. Formation with the quartz-micaceous schists of the Nielsenfjellet Formation of Brøggerhalvøya. It is more likely to suppose its affiliation to the Quartzite-shale Formation by Hjelle et al. 1979.

A.A.Krasil'shikov, S.I.Turčenko

N

NEUKPIGGEN FORMATION ("FORMACIJA")

Lt. Proterozoic (Vendian?)

(Harland et al. 1979)

Named from a ridge in the south of Prins Karls Forland.

Developed in the stratotype area. This is the upper formation of the Ferrier Group. It conformably (?) overlies the Peterbukta Formation; the upper boundary is unknown. It consists of calcareous "mixtite" shales with variably sized clasts of dolomite, limestone, and granite. In the lower part of the succession meter-thick lenses of dolomite marbles occur. The thickness is 300 m.

A.A.Krasil'shikov

NIELSENFJELLET FORMATION ("SVITA")

*Lt. Proterozoic (early part)

(Challinor 1967, Krasil'shikov 1973*; Quartz Mica Schist Series: Orvin 1934; Group de quartzites et mica schists: Barbaroux 1966)

Named from a mountain on northeastern Brøggerhalvøya.

Northern Brøggerhalvøya. It is the upper (?) formation of the Kongsvegen Group. The boundary with the underlying (?) Steenfjellet Formation is conformable, while the upper boundary is tectonic. The formation consists of dark phyllites, mica schists and light quartzites. Barbaroux (1966) divided it into two members, the Bertel(toppen) and Slåtto members, on the basis of lithological alternations. The formation has most likely a thickness of 1500 m (Harland et al. 1979).

A.A.Krasil'shikov

NIGERBREEN LIMESTONE

E. Ordovician

(Major & Winsnes 1955, Birkenmajer 1959)

See Nigerbreen "Tolšča".

A.M.Teben'kov

NIGERBREEN LIMESTONE FORMATION

E. Ordovician

(Birkenmajer 1975, 1978b)

See Nigerbreen "Tolšča".

A.M.Teben'kov

NIGERBREEN "TOLŠČA" (MEMBER)

E. Ordovician

(Krasil'shikov 1973)

Named from a glacier in Sørkapp Land (Major & Winsnes 1955).

Developed to the south of Hornsund. This member has transitional boundaries with the under- and overlying deposits. There occur dark, banded limestones with cherts. In Sørkapp Land they are distinguished within the Dusken Formation as an independent member with the thickness of 120 m. Early Ordovician (Late Canadian) gastropods are found.

A.M.Teben'kov

NISSENFJELLA FORMATION ("SVITA")

*L.(?) Proterozoic

(Gee & Hjelle 1966, Krasil'shikov 1973*)

Named from a mountain massif at the northwestern coast of Spitsbergen.

Developed in the stratotype area; the lower formation of the Krossfjorden "Serija". The lower boundary of the formation is concealed by superimposed migmatization processes, but in most places it is of tectonic character. The upper boundary with Signehamna Formation is not so clear and is defined by the disappearance of amphibolite bodies. Fine- and medium-grained microporphyroblastic plagiogneisses with thin amphibolite bands occur; the rocks in the lower part are migmatized. The thickness is about 3000 m.

S.A.Abakumov

NORDPORTEN MEMBER ("TOLŠČA")

E. Ordovician

(Vallance & Fortey 1968)

Named from the northern entrance of Hinlopenstretet between Nordaustlandet and Spitsbergen.

Northeastern extremity of Ny Friesland and lower domains of the Valhallfonna glacier. This is the upper member of the northern succession of the Kirtonryggen Formation and corresponds to the middle limestone member of the stratotype. It lies conformably upon the limestones of the Basissletta Member and is conformably, though with a sharp boundary overlain by the dark limestones and shales of the Valhallfonna Formation. There are massive, light limestones with bands of darker argillaceous varieties. The thickness is 220 m. Abundant remains of Early Ordovician (Late Canadian) trilobites, brachiopods, nautiloids, gastropods and ostracods occur.

A.A.Krasil'shikov

NORDVIK(A) (old name: NORVIK)* FORMATION ("SVITA")

M.- Lt. Riphean

(Flood et al. 1969, Krasil'shikov 1965, 1973; N. Series: Kulling 1934).

Named by Kulling after a bay in the inner part of Murchisonfjorden in western Nordaustlandet.

Western and central Nordaustlandet. This is the fifth (from below) formation of the Murchison Bay "Serija". It lies conformably, but with a sharp boundary upon the quartzites of the Flora(berget) "Svita". It has a transitional boundary with the overlying coloured deposits of the Raudstup(et) Formation. Rocks are dark grey, fine-grained calcareous quartz sandstones, and in lesser quantities banded argillo-calcareous siltstones. The thickness is 250-280 m. In the sandstone matrix Riphean microphyllites occur.

A.M.Teben'kov

* the editor

NORDVIK(A) (old name: NORVIK)* SERIES

(Kulling 1934)

See Nordvik(a) Formation.

A.A.Krasil'shchikov

* the editor

NORTHERN GRAMPIAN SERIES ("SERIJA", "GRUPPA")

Proterozoic

(Tyrrell 1924)

From the mountain ridge Grampianfjella in central Prins Karls Forland.

Northern part of Prins Karls Forland. Alternating divisions of banded siltstones and black argillites; bands of quartzites, gravel sandstones, graphitic shales and metadiabase lenses. The thickness and stratigraphical position have not been defined. See also "Grampian Group" (Harland et al. 1979) and "Quartzite-Sandstone Formation" (Hjelle et al. 1979).

A.A.Krasil'shchikov

NOTTINGHAMBUKTA FORMATION ("FORMACIJA")

E. Riphean (?)

(Birkenmajer 1975)

Named from a bay to the north of the entrance of Hornsund.

The lower formation of Vimsodden Subgroup. It consists of mica schists and phyllites with quartzite bands, quartz tilloids and rhyolite conglomerates (lower part), and dolomites (upper part), such as conformable amphibolite bodies (actinolitized gabbro-diabase). The thickness is 1550 m. In areas other than the stratotype area it cannot be distinguished as an independent lithostratigraphical unit.

A.A.Krasil'shchikov

NØRDSTEBREEN MEMBER ("TOLŠČA")

M.- L.(?) Cambrian

(Birkenmajer 1978a)

Named from a small glacier in southern Wedel Jarlsberg Land.

Southern Wedel Jarlsberg Land. This is the upper member of the Nørdstetinden Formation, resting conformably, sometimes with a transitional boundary, upon the massive dolomites of the Hansbreen Member. It is overlain by quartzites of Early Ordovician Wiederfjellet Formation with an erosive and stratigraphical unconformity. There occur platy, dark dolomites, alternating with yellow argillaceous dolomites. The thickness is 50 m. Poorly preserved inarticulate brachiopods do not indicate the age of the member more precisely than Cambrian.

A.M.Teben'kov

NØRDSTETINDEN DOLOMITE FORMATION

M.- L.(?) Cambrian

(Birkenmajer 1975, 1978a)

See Nørdstetinden "Svita".

A.A.Krasil'shchikov

NØRDSTETINDEN SERIES

M.- L.(?) Cambrian

(Birkenmajer 1958)

See Nørdstetinden "Svita".

A.A.Krasil'shchikov

NØRDSTETINDEN "SVITA"* (FORMATION; "TOLŠČA", MEMBER)

M.- Lt. Cambrian

(Krasil'shchikov 1973)

Named from a mountain in southern Wedel Jarlsberg Land (Birkenmajer 1958).

Southern Wedel Jarlsberg Land and northern Sørkapp Land. This is the upper "svita" of the Sofiekammen "Serija". The lower boundary is normally tectonic. The upper boundary with the Early Ordovician quartzites of the Wiederfjellet Formation. It is divided into two members: the lower Hansbreen Member consisting of massive grey dolomites, and the upper Nørdstebreen Member characterized by alternating dark grey dolomites with yellowish argillaceous varieties. The thickness is 150-200 m. In the upper part of the formation some poorly preserved inarticulate brachiopods of Cambrian age occur, which cannot be determined more precisely.

A.A.Krasil'shchikov, A.M.Teben'kov

* First introduced as "svita" rank here.

OLDER DOLOMITE SERIES

Lt. Riphean

See Russehamna "Svita".

A.A.Krasil'shchikov

OLENELLUSBREEN MEMBER ("TOLŠČA")

E. Cambrian

(Birkenmajer 1978a)

Named from a small glacier in southern Wedel Jarlsberg Land.

Southern Wedel Jarlsberg Land and northern Sørkapp Land. This is the lower member of the Vardepiggen "Podsvita" being stratigraphically equivalent to the lower part of the Slakli Series. It lies conformably, possibly with local erosive contacts (lenses of sedimentary breccias at the base!) upon the dolomites of the Blåstertoppen "Svita". The member consists of green and black shales, lenses and inclusions of sedimentary (dolomites and limestones) breccias and calcareous silty sandstones. The thickness increases from 44-65 m in the type section (Vardepiggen) to 300-350 m in Sørkapp Land (Midifjellet). *Olenellus* trilobites indicate late Early Cambrian age.

A.M.Teben'kov

OLENIDSLETTA MEMBER ("TOLŠČA")

E. Ordovician (Arenig)

(Fortey & Bruton 1973)

Named from a plain in northeastern Ny Friesland.

Developed in the stratotype area; the lower member of the Valhallfonna Formation. It overlies massive light limestones of the Nordporten Member (Kirtonryggen Formation) with a sharp boundary, and has a transitional boundary with the overlying Profilbekken Member. Black and dark brown, evenly bedded limestones (partly bituminous) and graptolitic shales with chert laminae. The thickness of the member is 145 m. In the lower part olenid trilobites and Early Arenig graptolites are found, in the middle part trilobites and inarticulate brachiopods of Arenig age occur, and in the upper part Late Arenig trilobites and graptolites.

A.A.Krasil'shchikov

OSLOBREEN DOLOMITE DIVISION ("TOLŠČA")

E. Ordovician

(Harland et al. 1966; Kirtonryggen Dolomite: Gobbet & Wilson 1960; see also Krasil'shchikov 1973)

This division lies conformably between the middle and lower limestone members of the Kirtonryggen Formation (Oslobreen Series). Originally, it was considered as a part of the Lower Oslobreen Limestone (Harland & Wilson 1956). They are characterized by alternating silty dolomites and micritic limestones. The thickness is 70-85 m. No determinable fossils are found.

A.A.Krasil'shchikov

OSLOBREEN DOLOMITES

Cambrian

(Harland & Wilson 1956).

See Tokammane Dolomite "Podsvita".

A.A.Krasil'shchikov

OSLOBREEN LIMESTONES

(Harland & Wilson 1956)

See Kirtonryggen Formation.

A.A.Krasil'shchikov

OSLOBREEN, LOWER LIMESTONE DIVISION ("TOLŠČA")

E. Ordovician (E. Canadian)

(Harland et al. 1966; Lower Oslobreen Limestone: Harland & Wilson 1956; see also Krasil'shchikov 1973).

The lower division of the Kirtonryggen Formation, Oslobreen Series. It lies conformably upon Canadian dolomites of the Tokammane Formation and has a transitional boundary with the overlying Dolomite Division, which originally was included into the Lower Oslobreen Limestones (Harland & Wilson 1956). The division is composed of massive brownish-grey limestones with numerous gastropods, corals and trilobite remains. The thickness is 114-160 m. In the northeastern part of Ny Friesland (Valhallfonna glacier) this division corresponds to the Spora Member (Fortey & Bruton 1973).

A.A.Krasil'shchikov

OSLOBREEN, LOWER LIMESTONES

(Harland & Wilson 1956)

See Oslobreen, Lower Limestone Division.

A.A.Krasil'shchikov

OSLOBREEN, MIDDLE LIMESTONE DIVISION ("TOLŠČA")

E. Ordovician (M.- Lt. Canadian)

(Harland et al. 1966; Middle Oslobreen Limestone: Harland & Wilson 1956; see also: Krasil'shchikov 1973)

The middle part of the succession of the Kirtonryggen Formation (Oslobreen Series). It lies between the dolomite and upper limestone divisions and has transitional boundaries. It is characterized with closely alternating massive and platy brownish-grey limestones. Within the latter abundant trilobites of Early Ordovician age occur. The thickness is about 200 m.

A.A.Krasil'shchikov

OSLOBREEN, MIDDLE LIMESTONES

(Harland & Wilson 1956)

See Oslobreen, Middle Limestone Division.

A.A.Krasil'shchikov

OSLOBREEN, UPPER LIMESTONE DIVISION ("TOLŠČA")

Ordovician

(Harland et al. 1966; Upper O. Limestone: Harland & Wilson 1956; see also Krasil'shchikov 1973)

This division represents the upper division of the Kirtonryggen Formation (Oslobreen Series), resting conformably upon the Middle Limestone Division of the same formation. It is composed of massive, spotty, dolomitic limestones with poorly preserved fragments of gastropods, nautiloids and trilobites. The exposed thickness is about 500 m.

A.A.Krasil'shchikov

OSLOBREEN, UPPER LIMESTONES

(Harland & Wilson 1956)

See Oslobreen, Upper Limestone Division.

A.A.Krasil'shchikov

OSLOBREEN SANDSTONES

E. Cambrian ?

(Harland & Wilson 1956)

See Tokammane Sandstone "Podsvita".

A.A.Krasil'shchikov

OSLOBREEN SERIES ("SERIJA")

Cambrian - Ordovician

(Harland & Wilson 1956, Gobbet & Wilson 1960; see also: Krasil'shchikov 1973)

Named from a glacier in the Southeast of Ny Friesland.

Ny Friesland peninsula, eastern and northwestern Olaf V Land. It is the upper part of Hecla Hoek Complex. It lies without any evidence of an unconformity upon the Vendian Polarisbreen Series, and is overlain by Carboniferous deposits with a structural unconformity. At the base of the succession sandstones occur, and higher up dolomites with sporadic cephalopods and inarticulate brachiopods (Cambrian?), as well as limestones with trilobites (Early Ordovician). The thickness of the series is more than 1200 m. The O. Series is divided into two formations, the Tokammane (Cambrian) and Kirtonryggen (Early to Middle? Ordovician); (Tokammane and Kirtonryggen Fms.: Harland et al. 1956). The Valhallfonna Formation has later been included into the O. Series. (Valhallfonna Fm.: Vallance & Fortey 1968).

A.A.Krasil'shchikov

OXFORDBREEN FORMATION ("SVITA")

*Lt. Riphean

(Harland et al. 1966, Krasil'shchikov 1973*)

Named from a glacier in the southern part of Ny Friesland.

Ny Friesland peninsula from the Faksevågen bay in the north to the stratotype area. This is the upper formation of the Veteranen Group, resting conformably between the greywackes of the Glasgowbreen Formation and the limestones of the Grusdievbreen Formation. The lower part of the formation (Enpiggen "Podsvita") is

composed of dark siltstones and sandstones, with dark grey limestone bands containing Late Riphean stromatolites and microphytolites. The upper part (Fulmarberget "Podsvita") consists of coloured shales. The thickness is 500-800 m.

A.A.Krasil'shchikov

OXFORDBREEN SERIES ("SERIJA")

(Harland & Wilson 1956)

See Oxfordbreen Formation.

A.A.Krasil'shchikov

P

PAIERLBREEN MEMBER ("TOLŠČA")

E. Ordovician ?

(Birkenmajer 1978b)

Named from a glacier on Wedel Jarlsberg Land.

Occurs locally to the south and north of Hornsund. This is the lower member of the Wiederfjellet "Svita". It overlies Cambrian dolomites with a stratigraphical unconformity, and has a transitional boundary with the overlying Gåsbreen Member. Light, dolomitic sandstones and quartzites occur, and at the base lenses of sedimentary breccias with clasts derived from underlying dolomites. The thickness decreases southward, from 150 to 20 m. No fossils are found. The P. Member is correlatable with the dolomitic sandstones and quartzites of the Hornstullodden Formation (see above).

A.M.Teben'kov

PEACHFLY GROUP ("GRUPPA")

Cambrian - E. Ordovician ?

(Harland et al. 1979)

From the Peachfly littoral plain on the western coast of Prins Karls Forland.

Western part of southern Prins Karls Forland. The group is composed of phyllites with lesser quantities of quartzitic sandstones and metavulcanites. It is divided into 4 formations, from below: Fisherlaguna, Alasdairhornet, Hornnes and Knivodden formations. The total thickness is 1300 m. Both boundaries are tectonic.

A.A.Krasil'shchikov

PERSBERGET FORMATION ("SVITA")

M. Riphean (?)

(Flood et al. 1969)

Named from a mountain on the northwestern coast of Nordaustlandet.

Western and central Nordaustlandet. This is the lower formation of the Murchison Bay "Serija". It erosively overlies the rocks of the Brennevinsfjorden Formation (Botniahalvøya Group) and is conformably overlain by the Westmanbukta Formation. The rocks are grey quartzites with a lesser quantity of dark shales, and in the upper part of the succession locally siltstones; the thickness varies from 100 to 400 m. No fossils are found.

A.M.Teben'kov

PETERBUKTA FORMATION ("FORMACIJA")

Lt. Proterozoic

(Harland et al. 1979)

Named from a bay on the southeastern coast of Prins Karls Forland.

Developed in the stratotype area; the third from below formation of the Ferrier Group. It lies conformably (?) between the Hardiefjellet (below) and Neukpiggen formations. It is composed of well-sorted, fine-grained greywackes. The metamorphic grade is greenschist facies. The thickness is 160 m.

A.A.Krasil'shchikov

PHYLLITES OF MOUNT SLÅTTO (Phyllades du Mont Slåtto)

(Barbaroux 1966)

See Slåtto "Tolšča".

A.A.Krasil'shchikov

PINKIE FORMATION ("FORMACIJA")

Proterozoic?

(Harland et al. 1979)

Named from a mountain spur in central Prins Karls Forland.

It is developed in the central, mountainous part of the island. The P. Formation is composed of quartz-biotite, feldspar-magnetite-biotite and calcareous schists with some beds of acid effusive rocks (felsites). The exposed thickness is 200 m. Metamorphism is from greenschist to amphibolite facies. Stratigraphical position and age of the Pinkie Formation are not defined. It may be correlated to the Vestgötabreen Formation on the eastern coast of Forlandsundet (Harland et al. 1979).

A.A.Krasil'shchikov

PLANETFJELLA GROUP ("GRUPPA")

Proterozoic

(Harland et al. 1966, Wallis 1969)

Named from a mountain massif in southern Ny Friesland (Harland & Wilson 1956).

This group forms the middle, watershed area of the Ny Friesland Peninsula. In the British scheme it is the upper group of the Stubendorffbreen Supergroup. The boundaries are tectonic. In the type region occur mica and garnet-mica schists, often with feldspar porphyroblasts. The thickness is about 1000 m (Harland & Wilson 1956). It was later described in detail with a greater thickness (5500 m, group rank) in northern Ny Friesland (Mosselhalvøya) and subdivided into the Flåen and Vildadalen formations. It is stratigraphically and lithologically equivalent to the Mossel Series of the Soviet scheme (Krasil'shchikov 1970, 1973).

See Mossel "Serija".

S.A.Abakumov, A.A.Krasil'shchikov

PLANETFJELLA SCHISTS

(Harland & Wilson 1956)

See Planetfjella Series.

S.A.Abakumov

PLANETFJELLA SERIES ("SERIJA")

E. Proterozoic

(Harland & Wilson 1956)

A different name, by the same authors, for "Planetfjella Schists". See Planetfjella Group and Mossel "Serija".

S.A.Abakumov

POLARISBREEN SERIES ("SERIJA")

Vendian (Eocambrian, "Infracambrian")

(Harland & Wilson 1956, Wilson & Harland 1964; Polarisbreen Group: Harland et al. 1966; see also Krasil'shchikov 1973)

Named from a glacier in eastern Ny Friesland.

Ny Friesland and Olaf V Land, from Sorgfjorden in the north to the Akademikerbreen area. The P. Series is attributed to the upper part of the Hecla Hoek Complex (Hinlopenstretet Supergroup). It lies between Late Riphean dolomites of the Akademikerbreen Series and Early Cambrian(?) sandstones of the Oslobreen Series. At the base indications of local erosion exist. The upper boundary is sharp, but without indications of an unconformity. The P. Series is characterized by a mainly silty-argillaceous composition of its deposits and by the presence of tilloidal conglomerates (tillites, according to Harland et al. 1954) in the middle part. The thickness of the series is 500-800 m. Its Vendian age is also confirmed by occurrences of *Boxonia grumulosa* Kom. stromatolites near the base of the series, and by the microphytolite complexes found throughout the whole succession (Raaben & Zabrodin 1969). The P. Series is divided into the Elbobreen, Wilsonbreen and Drakaisen formations.

A.A.Krasil'shchikov

POLARISBREEN, LOWER SHALE FORMATION

(Harland & Wilson 1956)

See Elbobreen Formation.

A.A.Krasil'shchikov

POLARISBREEN, UPPER SHALES
(Harland & Wilson 1956)
See Drakøisen Formation.
A.A.Krasil'shikov

POLARISBREEN TILLITE FORMATION
(Harland et al. 1966)
See Wilsonbreen Formation.
A.A.Krasil'shikov

POLHEM FORMATION ("FORMACIJA") E. Proterozoic
(Harland et al. 1966, Gayer & Wallis 1966)
Named from a camp (Polhem) in Mosselbukta, northern Ny Friesland.

The occurrence is restricted to the Mosselbukta area. It is the lower formation of the Harkerbreen Group. The lower boundary is not observed. The Rittervatnet Formation is conformably overlying. There are evenly medium-grained, light quartzites, quartzitic gneisses, mica plagiogneisses and conformable amphibolite beds. The thickness is at least 900 m. As to its stratigraphical position and lithological habitus, the P. Formation is most likely equivalent to the Bleikfjellet and Tordenryggen "svita"s of the southeastern succession, i.e. the Harkerbreen Formation (strictly speaking).

S.A.Abakumov

PROFILBEKKEN MEMBER ("TOLŠČA") E.- M. Ordovician
(Fortey & Bruton 1973)
Named from a creek in northeastern Ny Friesland.

Developed in the stratotype area. This is the upper member of the Valhallfonna Formation. It shows a transitional boundary with rocks of the lower member, while the upper boundary is not observed. The rocks are grey, dark brown and black limestones, distinctly bedded and platy in the lower part of the member, and massive in its upper part. Bands of glauconitic limestones and calcareous conglomerates occur. At the base there is a marker horizon of limestones with abundant inarticulate brachiopods and phosphatized trilobite imprints, while in the upper graptolite shales occur. The thickness of the member is 110 m. Abundant trilobites, brachiopods and graptolite remains (in the lower part of the member and on its top) indicate Late Arenig to Early Llanvirn (Early-Middle Ordovician).

A.A.Krasil'shikov

9

QUARTZITE AND MICA SCHIST SERIES
(Orvin 1934; Group de quartzites et mica schists - Barbaroux 1966)
See Nielsenfjellet Formation.
A.A.Krasil'shikov

QUARTZITE-SANDSTONE FORMATION ("FORMACIJA") Riphean
(Hjelle et al. 1979)

Occurs on northern Prins Karls Forland. It consists of alternating quartzites and fine- to medium-grained sandstones, in places conglomerates. The total thickness exceeds 900 m. It lies probably between the Calc-argillo-volcanic and the Black Shale formations, though the boundaries are tectonical. According to the proposed scheme, it is a stratigraphical equivalent to the Quartzite-Shale Formation (see below) as well as to the Fuglehuk(en) Group (Atkinson 1960) of the Northern Grampian Series (Tyrell 1924) and the Slyngfjellet Conglomerate (Birkenmajer 1974).

A.A.Krasil'shikov, S.I.Turčenko

QUARTZITE-SHALE FORMATION ("FORMACIJA") Riphean
(Hjelle et al. 1979)

Occurs on Oscar II Land between St. Jonsfjorden and Isfjorden and on southern Prins Karls Forland. There

are alternating quartzites and dark slaty siltstones; in the upper part some bands of black oolitic limestone occur. The total thickness is about 1000. Its stratigraphical position is not clear, but it probably underlies the Calc-argillo-volcanic Formation and is equivalent to the Quartzite-Sandstone Formation (see above).

A.A.Krasil'shikov, S.I.Turčenko

R

RASSTUPET LIMESTONE

(Major & Winsnes 1955, Birkenmajer 1960)

See Rasstupet "Tolšča".

A.M.Teben'kov

E. Ordovician

RASSTUPET LIMESTONE MEMBER

(Birkenmajer 1975, 1978b)

See Rasstupet "Tolšča".

A.M.Teben'kov

E. Ordovician

RASSTUPET "TOLŠČA" (MEMBER)

(Krasil'shikov 1973)

Named from a mountain escarpment on the northern slope of Tshebysjovfjellet, Sørkapp Land (Major & Winsnes 1955).

Occurs locally in the Tshebysjovfjellet area. This is the lower member of the Hornsundtind "Svita". The lower boundary is conformable, though sharp; the upper beds have a transitional boundary with the Tshebysjovfjellet Limestones. It consists of massive, coarse-bedded, pinkish-grey to brown limestones. The thickness is 80 m. Early Ordovician (Late Canadian) gastropods, brachiopods and nautiloids are found.

A.M.Teben'kov

E. Ordovician

RAUDSTUP(ET) SERIES

(Kulling 1934)

See Raudstupet "Svita".

A.A.Krasil'shikov

RAUDSTUP(ET) "SVITA" (FORMATION)

(Krasil'shikov 1965, 1973; R. Series: Kulling 1934)

From the mountain Raudstupet on the northern coast of Murchisonfjorden.

Western part of Nordaustlandet. This is the upper "svita" of the lower "podserija" of the Murchison Bay "Serija". It shows transitional boundaries with the underlying Nordvik(a) and the overlying Sälodd(en) formations. Reddish-brown and greenish-grey calc-argillaceous siltstones and calcareous argillites alternate. The thickness is 250 m. No fossils are found.

A.M.Teben'kov

M.- Lt. Riphean

RAUDSTUP(ET) - SÄLODD(EN) FORMATION

(Flood et al. 1969)

This term collects the Raudstup(et) and Sälodd(en) formations (see these).

A.M.Teben'kov

M.- Lt. Riphean

RENARDBREEN DIVISION ("PAČKA")

(Harland 1978)

From a glacier in the extreme northwest of Wedel Jarlsberg Land.

Distinguished in the type locality as the lower division of the Kapp-Lyell Unit. Upwards, it passes gradually over into the conglomerates and sandstones of the Lyellstranda Division. At the base an erosive contact is supposed. The division is composed of tilloid conglomerates with dolomite boulders and dark limestone boulders. According to Harland the thickness is 1-2 km.

A.A.Krasil'shikov

Vendian

REVDALLEN SERIES

(Birkenmajer 1958)

See Revdalen "Svita".

A.M.Teben'kov

REVDALLEN "SVITA" ("TOLŠČA", FORMATION)

*Late E. Proterozoic

(Krasil'shnikov & Kovaleva 1976, Krasil'shnikov 1973*, Birkenmajer 1975)

Named from a valley on the northern coast of Hornsund.

Occurs locally in the stratotype area north of Hornsund. This is the upper "Svita" of the Isbjørnhamna "Serija". It overlies the Arikammen Formation with a transitional boundary. The upper boundary is tectonic. Garnet-mica schists with bands of graphite-containing varieties occur. The thickness is about 500 m. Amphibolite facies metamorphism.

A.M.Teben'kov

REVDALLEN "TOLŠČA" (MEMBER)

(Krasil'shnikov 1973)

See Revdalen "Svita".

A.M.Teben'kov

RHEANUTEN BEDS ("SLOI")

Lt. Riphean

(Harland et al. 1966)

Named from a mountain top in central Ny Friesland near the Veteranen glacier.

Recognized in the stratotype area as the upper part of the Cavendishryggen "Podsvita" of the Kingbreen Formation. The lower and upper boundaries are conformable. Thin-platy, greenish quartzites with greywacke bands occur. In the fourth band from the base there is one half-meter thick metadiabase bed (Wilson 1958). The thickness is 150-200 m. It corresponds to the upper division of the Cavendishryggen Quartzites (Wilson 1958). No fossils are found.

A.A.Krasil'shnikov

RICHARDDALEN GROUP*

(Hjelle & Lauritzen 1982; after D.G. Gee 1966, unpubl.)

See Solanderfjellet "Serija".

* Compliment to Russian edition (A.A.Krasil'shnikov).

RITTERVATNET FORMATION ("SVITA")

*E. Proterozoic

(Harland et al. 1966, Gayer & Wallis 1966, Krasil'shnikov 1973*)

Named from a lake in northwestern Ny Friesland.

Northwestern part of the Ny Friesland Peninsula. This is the middle formation of the Atomfjella "Serija" (the second formation from below of the Harkerbreen Group, Harland et al. 1966). It lies conformably between the Polhem and Banghehuk(en) formations. It is characterized by lithological diversity. In its stratotype in northern Ny Friesland it is divided into three divisions, from below: blueish-white quartzite and biotite marble (160 m), graphitic schists with marble, quartzite and laminated amphibolite bands (160 m), alternating massive banded gneisses, migmatites and biotite schists (72 m). Within the latter, two horizons of coarse clastic metamorphic material (metatilloids, according to Harland et al. 1966) are exposed. Throughout the whole succession conformable amphibolite bodies occur. The total thickness is 400-660 m.

S.A.Abakumov

ROALDTOPPEN GROUP

Lt. Riphean

(Flood et al. 1969)

From the mountain Roaldtoppen on the southern coast of Murchisonfjorden.

Western part of Nordaustlandet. In the Norwegian scheme (Flood et al. 1969) it is the upper "group" of the Murchisonfjorden Supergroup. It consists of the Hunnberg(et) and Ryssø formations.

A.M.Teben'kov

ROSENFJELLA MEMBER ("TOLŠČA", "SUBFORMACIJA")
(Harland et al. 1966, Wallis 1969, Krasil'shchikov 1973*)

*E. Riphean (?)

Named from a mountain massif in northern Ny Friesland.

Watershed part of Ny Friesland Peninsula. This is the upper member of the Vildadal Formation, conformably overlying the Ålbreen Member. The upper boundary is usually tectonic. There are banded phyllites and, in the upper part, alternating micaceous and carbonaceous varieties. The thickness is 1500-1800 m.

See Vildadal Formation, the upper 'subformation'.

S.A.Abakumov

ROSSBUKTA FORMATION ("FORMACIJA")
(Harland et al 1979)

Cambrian ?

From John Rossbukta, a bay on the southeastern coast of Prins Karls Forland.

Developed in the stratotype area, constituting the upper formation of the Geikie Group. It lies conformably with a transitional boundary upon the carbonate Gordon Formation; the upper boundary is tectonic. It is composed of dark cherty and cherty calcareous (in the lower part) phyllites with sandstone bands of varying grain sizes. No fossils are found. The thickness is 300 m.

A.A.Krasil'shchikov

ROYSHA(UGEN)* FORMATION ("FORMACIJA")
(Harland et al. 1979)

Ordovician ?

Named from a hill (Royshaugen)* in central Prins Karls Forland.

Occurs on a mountain ridge in northern Prins Karls Forland. This is the upper formation of the Scotia Group. It lies conformably over shales of the Kaggen Formation and has a transitional boundary with the Utnes Formation of the Grampian Group. Grey dolomitic siltstones and black carbonic shales alternate, the latter prevailing in the upper parts of the succession. No fossils are found. The thickness is about 400 m.

A.A.Krasil'shchikov

* In the literature, the map abbreviation "Roysha." has wrongly been used for the formation name. The editor.

RUSSEHAMNA "SVITA" (FORMATION)
(Krasil'shchikov & Livšic 1974)

Lt. Riphean

From Russehamna (a bay) on the southeastern coast of Bjørnøya.

Bjørnøya, southeastern part. This is the lower part of Hecla Hoek Complex on Bjørnøya. The base of the succession is not exposed. It is unconformably(?) overlain by clastic rocks of the Vendian(?) Sørhamna Formation. It consists of massive, light dolomites. In the middle part they are banded and ferruginized. The quantity of sandy quartz material increases upwards. The thickness exceeds 500 m. Throughout the whole succession microphytolites occur: in the lower half they are of Late Riphean, in the upper half of transitional, Late Riphean to Vendian age (Krasil'shchikov & Mil'shtejn 1975).

A.A.Krasil'shchikov

RUSSEPASSET MEMBER ("PAČKA")
(Birkenmajer & Orlowski 1978).

E. Cambrian

Named from an intermontane valley in Sørkapp Land.

Local occurrence in the Flakfjellet area, Sørkapp Land. This is the upper part of the Blåstertoppen "Svita". The lower and upper boundaries are conformable and lithologically sharp. The upper contact is possibly erosive (Birkenmajer 1978a). The rocks are dark, sandy dolomites with 'pseudo-cherty' inclusions. The exposed thickness is 25 m. Fossils have not been found.

A.M.Teben'kov

RYSSØ FORMATION ("SVITA")

Lt. Riphean

(Nordenskiöld 1863, Krasil'shchikov 1965, 1973, Flood et al. 1969; R. Series: Kulling 1934)

The name is given by Nordenskiöld (1863) after the island Ryssøya in Murchisonfjorden.

Western Nordaustlandet. This is the upper formation of the Murchison Bay "Serija", conformably, though with a sharp boundary, overlying the Hunnberg(et) Formation. It is overlain, though without indication of an unconformity, by the clastic rocks of the Backaberg(et) Formation which is assigned to the Vendian. The R. Formation is divided into two 'subformations': lower massive, light grey dolomites with badly preserved

stromatolites and microphytolites (500-600 m), and upper dark limestones (below) and light dolomites with Late Riphean stromatolites (150-180 m). The total thickness is 650-780 m.

A.A.Krasil'shchikov

RYSSØ SERIES

(Kulling 1934)

See Ryssø Formation.

A.A.Krasil'shchikov

S

SARSØYRA BEDS

(C.Wilson in Harland et al. 1979)

See Sarsøyra Formation.

A.A.Krasil'shchikov

SARSØYRA FORMATION ("FORMACIJA")

E. Paleozoic ?

(Harland et al. 1979)

From Sarsøyra, a plain on the eastern coast of Forlandsundet.

Eastern coast of Forlandsundet, from Engelsbukta to St. Jonsfjorden. It consists of dark grey calcareous shales, dark and coloured "cleaved argillites", calcareous conglomerates with small, flattened pebbles, and greenstones. The total thickness is 500 m. Calcareous clasts of the conglomerates occasionally contain coral remains (Ordovician-Silurian?). The lower and upper boundaries are tectonic. In the scheme by Harland et al. (1979) the S. Formation occupies an intermediate position between the Bullbreen Group (Late Ordovician-Early Silurian) and the Vendian Comfortlessbreen Group. According to data by other investigators of the area (Hjelle et al. 1979), the S. Formation cannot be distinguished as an independent subdivision, and the greenstone rocks attributed to it are regarded as older ones.

A.A.Krasil'shchikov, S.I.Turčenko

SCOTIA* GROUP ("GRUPPA")

Ordovician ?

(Atkinson 1956, Harland et al. 1979)

Tyrrell (1924) used the synonym "Mont Scotia Series".

The Scotia Group supposedly occupies the highest stratigraphical level in northern Prins Karls Forland. Harland et al. (1979) suggests it to be the second group from above of the "Forland Complex" (see above) of Prins Karls Forland. At the base of the Scotia Group one may suppose a tectonic boundary, while it has a transitional boundary with the overlying Grampian Group. Within the succession of the group alternating members of siltstones and of black and green shales occur. It is divided into 3 conformable formations, (from above) the Baklia, Kaggen and Royssha(ugen) formations. The total thickness is 1000 m. According to data from Hjelle et al. (1979), the Black Shale Formation (see above), correlated with the Mont Scotia Series, dates back to the lower part of the Late Proterozoic.

A.A.Krasil'shchikov

* Named from the mountain Scotiafjellet, Prins Karls Forland. The editor.

SEDERHOLMFJELLEET GNEISSES

(Harland & Wilson 1956)

See Sederholmfjellet Member.

S.A.Abakumov

SEDERHOLMFJELLEET MEMBER ("SUBFORMACIJA")

E. Proterozoic

(Harland et al. 1966)

From the mountain Sederholmfjellet in southwestern Ny Friesland.

Occurs in the stratotype area. It is the lower member of the Eskolabreen Formation. The base of the succession is not exposed; it passes gradually(?) over into the overlying mica-plagiogneisses. Coarse-grained, feld-

spathized plagiogneisses alternate with essentially amphibole schists. The thickness exceeds 500 m.

S.A.Abakumov

SIGFREDBOGEN UNIT ("TOLŠČA")

E.?- M. Riphean

(Harland 1978)

Named from an inlet on the southwestern coast of Hornsund.

In the scheme by Harland, the Sigfredbogen Unit is placed on the base of the Sørkapp Land Proterozoic succession. It is composed of phyllites and schists. The thickness is more than 300 m. Stratigraphically and lithologically it is equivalent to the Bergskardet Formation (see above), defined by Birkenmajer (1975) to the north of Hornsund.

A.A.Krasil'shnikov

SIGNEHAMNA FORMATION ("SVITA")

Lt. Proterozoic

(Gee & Hjelle 1966; see also Krasil'shnikov 1973)

Named from a bay in Krossfjorden.

Southwestern part of Haakon VII Land and Mitrahalvøya. It is the middle formation of the Krossfjorden "Serija". There occur garnet-mica schists with quartzite bands. The lower boundary is placed where the schists are changing to massive plagiogneisses with amphibolite beds (Nissenfjella Formation). The S. Formation is unconformably (?) overlain by the essentially carbonaceous Generalfjella Formation. Upper greenschist facies metamorphism. The thickness is 2000-2500 m.

S.A.Abakumov

SJDANOVFJELLET LIMESTONE MEMBER

E. Ordovician

(Birkenmajer 1978b)

See Sjdánovfjellet Series.

A.M.Teben'kov

SJDANOVFJELLET SERIES ("TOLŠČA")

*E. Ordovician

(Major & Winsnes 1955, Krasil'shnikov 1973*)

The name is given after Sjdánovfjellet in Sørkapp Land.

Occurs in northern Sørkapp Land as alternating thick divisions of dark and light cherty limestones. In the upper part gastropods of Early Ordovician age occur. The total thickness is 600 to 700 m (according to Major & Winsnes 1955). Birkenmajer (1978b) regards the Sjdánovfjellet Limestone Member to be stratigraphically similar to the Tshebysjovfjellet Member, or at least to its upper part.

A.M.Teben'kov

SKODDEFJELLET FORMATION ("SVITA")

Late E. Proterozoic

(Birkenmajer 1975, Krasil'shnikov & Kovaleva 1976)

Named from a mountain on the northern side of Hornsund.

Occurs locally in the stratotype area to the north of Hornsund. This is the lower formation of the Isbjørnhamna Series. The lower boundary is not exposed. It has a transitional boundary with the overlying Arie kammen Formation. The rocks are garnet-mica schists alternating with muscovite plagiogneisses. The thickness exceeds 700 m. Amphibolite facies metamorphism.

A.M.Teben'kov

SKODDEFJELLET MEMBER ("TOLŠČA")

(Krasil'shnikov 1973)

See Skoddefjellet Formation.

A.M.Teben'kov

SKODDEFJELLET SERIES

(Birkenmajer 1958)

See Skoddefjellet Formation.

A.M.Teben'kov

SKÅLFJELLET MEMBER ("TOLŠČA")

(Krasil'shikov 1973)

See Skålfjellet Series.

A.A.Krasil'shikov

SKÅLFJELLET SERIES ("SERIJA")

E. Riphean (?)

(Birkenmajer 1958)

Originally, the S. Series was distinguished by Birkenmajer (1958) as an amphibolite complex, alternating with mica-schists and quartzites within the "Eimfjellet Formation" (see above). The so-called "Gangpasset Granitization Zone" consisting essentially of migmatites and amphibolites, as well as metasomatic tonalites and monzonites, has also been included into the S. Series. As the "amphibolites" of the S. Series actually are actinolitized gabbro-diorite, and as the "Gangpasset Granitization Zone" cannot have any stratigraphical significance, the name "Skålfjellet" is preserved for the stratified, mainly volcanic part of the succession (quartzites, schists) distinguished as an independent formation within the sedimentary-volcanic Werenskiöldbreen "Serija" (Krasil'shikov & Kovaleva 1976).

See Skålfjellet "Svita".

A.A.Krasil'shikov

SKÅLFJELLET SUBGROUP

(Birkenmajer 1975)

See Skålfjellet Series.

A.A.Krasil'shikov

SKÅLFJELLET "SVITA" (FORMATION)

E. Riphean (?)

(Krasil'shikov & Kovaleva 1976, Harland & Wright 1979)

Named from a mountain in southwestern Wedel Jarlsberg Land (Birkenmajer 1958)

Western Wedel Jarlsberg Land. It is the lower volcanic formation of the Werenskiöldbreen Series. The lower boundary is tectonic. It is conformably (?) overlain by the Gulliksenfjellet Quartzites, which are attributed to the Vimsødden "Svita" (Krasil'shikov & Kovaleva 1976). Actinolite schists with bedded bodies of amphibolitized gabbro-diorite occur; the upper part of the formation (250 m) consists of chlorite-muscovite-biotite schists with quartzite intercalations. The total thickness is up to 800 m. Metamorphism of greenschist facies.

A.A.Krasil'shikov

SLAKLI* SERIES

E. Cambrian

(Major & Winsnes 1955, Birkenmajer 1960)

In its original sense (Major & Winsnes 1955), the Slakli Series has 3 divisions, two of which being attributed to the Late Cambrian Gåshamna Formation in the modern scheme (Birkenmajer 1975, 1978a). As to its changed extent (Birkenmajer 1960) the entire Slakli Series is equivalent to the synonymous formation.

See Slakli "Svita".

A.A.Krasil'shikov

* From the valley Slaklidalen in Sørkapp Land. The editor.

SLAKLI* "SVITA"*** ("TOLŠČA", FORMATION)

E. Cambrian

(Krasil'shikov 1973; Slakli Series: Major & Winsnes 1955, Birkenmajer 1960)

Sørkapp Land, Wedel Jarlsberg Land. This is the second (in ascending order) formation of the Sofiekammen Series. It lies conformably, possibly erosively in places, over the Early Cambrian dolomitic Blåstertoppen Formation. The upper boundary is usually tectonic. It is divided into the Vardepiggen (lower) and Slaklidalen (upper) "podsvita"s, which corresponds to the twofold division of the Slakli Series by Birkenmajer (1960) and to the synonymous formation of the scheme by Birkenmajer (1975, 1978a). The lower "podsvita" is composed mainly of argillaceous, frequently graphitic shales; lesser quantities of dark limestones and dolomites occur. The thickness is from 110-130 m in the north, to 420-450 m in the south. The upper "podsvita" is composed of limestones with a thickness from 10-20 m in the south to 100-120 m in the north. The total thickness is 210-250 m in the north, 430-470 m in the south. Both "podsvita"s contain trilobite remains, indica-

ting an Early Cambrian age of the upper part.

A.A.Krasil'shchikov

* From the valley Slaklidalen in Sørkapp Land. The editor.

** First introduced as "svita" rank here. Named from a locality in Sørkapp Land (Major & Winsnes 1955).

SLAKLIDALEN LIMESTONE FORMATION

E. Cambrian

(Birkenmajer 1975, 1978a)

See Slaklidalen "Podsvita".

A.A.Krasil'shchikov

SLAKLIDALEN "PODSVITA"* ('SUBFORMATION')

E. Cambrian

(Birkenmajer 1975)

Named from an intermontane valley in Sørkapp Land.

Sørkapp Land and southern Wedel Jarlsberg Land. This is the upper "podsvita" of the Slakli "Svita". It corresponds to the upper part of the Slakli Series (Birkenmajer 1960). The upper and lower boundaries in type localities are tectonic, but generally, conformable bedding is supposed. The rocks are grey and black limestones, in places bituminous. The thickness is increasing northwards from 10-20 m in Sørkapp Land to 100-220 m in Wedel Jarlsberg Land. Olenellidae and eodiscidae indicate an Early Cambrian age for the upper part.

A.A.Krasil'shchikov, A.M.Teben'kov

* First introduced as "podsvita" rank here.

SLATE-QUARTZITE SERIES

Vendian ?

(Holtedahl 1920)

See Sørhamna "Svita".

A.A.Krasil'shchikov

SLYNGFJELLET CONGLOMERATE

(Birkenmajer 1960)

See Slyngfjellet "Tolšča".

A.A.Krasil'shchikov

SLYNGFJELLET CONGLOMERATE FORMATION

(Birkenmajer 1975)

See Slyngfjellet "Tolšča".

A.A.Krasil'shchikov

SLYNGFJELLET CONGLOMERATE SERIES

(Birkenmajer 1958)

See Slyngfjellet "Tolšča".

A.A.Krasil'shchikov

SLYNGFJELLET "TOLŠČA" (MEMBER)

M. Riphean ?

(Krasil'shchikov 1973)

Named from a mountain between the glaciers Hansbreen and Werenskioldbreen in Wedel Jarlsberg Land (Birkenmajer 1958).

West coast of Spitsbergen between Hornsund (in the south) and Engelskbuta. This is the lower member of the Sofiebogen Formation. At the base a large (angular?) unconformity is suggested. The S. "Tolšča" is overlain by the dolomitic Höferpynten "Svita" with a minor unconformity (Birkenmajer 1975). There occur quartzite conglomerates with spread limestone and granitoid pebbles. The thickness of the member is up to 500 m. Krasil'shchikov & Kovaleva (1976) included the S. "Tolšča" into the Vendian Bellsund "Serija" by mistake.

A.A.Krasil'shchikov, A.M.Teben'kov

SLÅTTO "TOLŠČA" (MEMBER)

Lt. Proterozoic (early part)

(Krasil'shchikov 1973; Phyllades du Mont Slåtto: Barbaroux 1966)

Named from a sunonymous mountain (Slåttofjellet)* on the eastern part of Brøggerhalvøya, Spitsbergen.

It is defined as the lower part of the "Quartzite and Mica-schist Series" (see Nielsenfjellet Formation). In the lower part phyllites prevail, while the upper part is dominated by quartzites. The thickness is about 400 m. According to recent data (Harland et al. 1979), it should be correlated with the upper part of the Nielsenfjellet Formation.

A.A.Krasil'shchikov

* the editor

SMEERENBURGFJORDEN "SERIJA" (GROUP)

E. Proterozoic

(Abakumov 1976)

Named from a fjord in northwestern Spitsbergen.

A collective name for the highest-grade metamorphic rocks of northwestern Spitsbergen. The base of the succession is not exposed; the boundaries with the overlying Krossfjorden "Serija" are tectonic or obscured by superimposed migmatization processes. There occur different gneisses and plagiogneisses, migmatites, amphibolite lenses and marble horizons. Metamorphism is of amphibolite facies with some relics of granulite facies. According to its composition it is divided into two formations: a lower(?), essentially magnesian (Waggonwaybreen "Svita"), and an upper, essentially aluminiferous (Kollerbreen "Svita"). Their stratigraphical relations are not clear. The total thickness is 13-15 km.

S.A.Abakumov

SMUTSBREEN CRYSTALLINE SCHISTS (AND MARBLES)

(Harland & Wilson 1956)

See Smutsbreen Formation.

S.A.Abakumov

SMUTSBREEN FORMATION ("SVITA")

*E. Proterozoic

(Harland et al. 1966, Krasil'shchikov 1973*)

Named from a glacier in southwestern Ny Friesland.

Southwestern Ny Friesland. This is the second formation from below of the Atomfjella "Serija". It lies conformably between the Eskolabreen and Harkerbreen formations. There occur dark garnet-mica plagiogneisses with some beds of two-mica plagiogneisses and biotite-amphibole schists; the upper part is essentially carbonate, composed of marbles and calciphyres. It is divided into two members, the Bohryggen and Westbyfjellet members. The total thickness is 1200 m.

S.A.Abakumov

SMUTSDALEN "SVITA" (FORMATION)

E. Proterozoic

(Abakumov 1965)

Named from a valley in southwestern Ny Friesland.

Distinguished as the upper part of the Austfjorden Series. The boundaries are not exposed. Quartzites and amphibolites occur. The thickness is 250 m. It has not been used as an independent unit since. On the basis of its lithology and structural position it should be included into the Harkerbreen "Svita".

A.A.Krasil'shchikov

SNØFJELLA MARBLES AND SCHISTS

Proterozoic

(Preston 1959, Harland 1960)

Named from a nunatak in southwestern Haakon VII Land.

Developed in the stratotype area. The boundaries are not exposed. The lower part of the succession, 2500 m thick, is represented mainly by graphitic quartz-mica schists; in the upper part (1600 m) alternating divisions of calcite and dolomite marbles occur. The metamorphic grade is greenschist facies. The total thickness is more than 4000 m. It can be correlated with the Liefdefjorden Series (Harland 1960).

A.A.Krasil'shchikov

SOFIEBOGEN FORMATION

(Birkenmajer 1958)

See Sofiebogen Group.

A.A.Krasil'shchikov

SOFIEBOGEN GROUP ("GRUPPA")

M.- Lt. Riphean

(Birkenmajer 1975)

Named from a bay on the northern side of Hornsund.

For the first time distinguished by Birkenmajer (1958) as the upper formation of the Precambrian succession of the Hornsund region. The stratotype area is described for the northern side of the bay. Based on the assumption of inverted layering, Birkenmajer (1958) distinguished 3 'series' within the S. Group, from below: the Slyngfjellet (conglomerate), Höferpynten (dolomite) and Gåshamna (phyllite) series. The total thickness has been estimated to 2100-2500 m or 1600-3700 m (Birkenmajer 1958 and 1975, respectively). Birkenmajer (1958, 1960, 1975) suggested unconformities at the base of the group (formation), and at its upper boundary with the Cambrian Sofiekammen Group (Formation).

See Sofiebogen "Serija".

A.A.Krasil'shikov, A.M.Teben'kov

SOFIEBOGEN "SERIJA" (GROUP)

M.? - Lt. Riphean - Vendian

(Krasil'shikov & Kovaleva 1976)

Defined by Krasil'shikov & Kovaleva (1976) in the Spitsbergen western coast area from Hornsund (south) to Engelsbukta, representing a flyschoid-carbonate complex that has not been subjected to regional metamorphism. The lower boundary with the sedimentary-volcanic Werenskioldbreen "Serija" is lithologically sharp and conformable. It is overlain by tilloid conglomerates of the Vendian Bellsund "Serija" with a structural (?) unconformity. Within the S. "Serija" one can distinguish two formations: a lower composed of argillaceous-sericitic shales (Gåshamna "Svita") and an upper composed of dolomites and limestones (Höferpynten "Svita"). The total thickness of the "serija" is 800-1500 m. Within the carbonate intercalations of the Gåshamna "Svita" and the major part of the Höferpynten "Svita", Middle to Late Riphean and Late Riphean to Vendian microphytolites are found. The previous schemes (Birkenmajer 1958, 1975, Krasil'shikov 1973) gave a threefold division of the S. "Serija" which assumes the presence of conglomerates at the base of the succession (Slyngfjellet Conglomerate, see above) and reverse stratigraphical order of the Gåshamna and Höferpynten "svita"s.

A.A.Krasil'shikov

SOFIEKAMMEN FORMATION ("SVITA")

*Cambrian

(Birkenmajer 1958, Krasil'shikov 1973*)

Named from a mountain ridge to the north of Hornsund.

Developed in the southern part of Wedel Jarlsberg Land and in central Sørkapp Land. Later raised to "serija" (Krasil'shikov 1976) and group rank (Birkenmajer 1975).

See Sofiekammen "Serija".

A.A.Krasil'shikov

SOFIEKAMMEN GROUP

Cambrian

(Birkenmajer 1975, 1978a)

See Sofiekammen "Serija".

A.A.Krasil'shikov

SOFIEKAMMEN "SERIJA" (GROUP)

Cambrian

(Krasil'shikov 1973, 1976)

Collecting Cambrian deposits in the southern part of Spitsbergen. It lies upon Precambrian shales with an angular (?) unconformity and a stratigraphical hiatus (Birkenmajer 1978a). The earlier hypothesis of a transitional boundary between these units (Birkenmajer 1960) is now revised. The upper boundary with the Ordovician Sørkapp Land Series represents a stratigraphical unconformity. The rocks are dolomites and limestones and lesser quantities of shales and arenites. The S. "Serija" is divided into 4 units: the Blåstertoppen, Slakli, Gnålberget and Nørdstetinden "svita"s. The total thickness is 800-1200 m (Krasil'shikov 1973 and Birkenmajer 1978a, respectively). The two lower formations contain olenellids of the upper part of the Early Cambrian; in the upper formation inarticulate Cambrian brachiopods occur which do not set close time limits.

A.A.Krasil'shikov, A.M.Teben'kov

SOLANDERFJELLET "SERIJA" (SERIES)

E. Proterozoic (?)

(Abakumov 1976)

From Solanderfjellet, a mountain on the eastern side of Raudfjorden.

Occurs on the peninsula between Raudfjorden and Breibogen in northern Spitsbergen. It unites the oldest (?) rocks of the northwestern basement region of Spitsbergen. The upper boundary is tectonic, while the lower one is not exposed. The rocks are gneisses and schists, small granitoid and hyperbasite bodies. Metamorphism is of upper amphibolite facies. The exposed thickness is about 2500 m. The S. "Serija" is lithologically similar to the Mont Blanc Schists (which also include eclogites), but the latter are attributed to the upper parts of the metamorphic complex of northwestern Spitsbergen. (Mont Blanc Schists: Harland 1960; Harland et al. 1966). The S. "Serija" is considered as an equivalent of the Richarddalen Group (D.G. Gee 1966, unpublished)*.

A.A.Krasil'shchikov

* Compliment to Russian edition (Krasil'shchikov)

SOLHØGDA UNIT ("TOLŠČA")

Riphean

(Harland 1978)

Named from a mountain ridge in northern Wedel Jarlsberg Land.

In the scheme of Harland (1978) this is the third unit from below of the succession to the south of Bellsund. It is mainly composed of carbonate rocks, with volcanic beds in the lower part. The thickness and stratigraphical position are not clear.

A.A.Krasil'shchikov

SPORA MEMBER ("TOLŠČA")

E. Ordovician

(Fortey & Bruton 1973)

Named from a creek in northeastern Ny Friesland.

Occurs in the stratotype area. This is the lower member of the northern succession of the Kirtonryggen Formation, corresponding to the lower limestone member of the stratotype. It lies conformably, though with a sharp boundary upon light dolomites of the Cambrian Tokammane Formation and is conformably overlain by alternating limestones and dolomites. It represents a marker horizon of massive, light grey or pale brown, fine-grained limestones. The thickness is 20 m. There occur abundant trilobite, brachiopod, gastropod and nautiloid remains. The fauna assemblage indicates Early Ordovician (Early Canadian) age.

A.A.Krasil'shchikov

STEEN GROUP (Group de Steen)

(Barbaroux 1966)

See Steenfjellet Formation.

A.A.Krasil'shchikov

STEENFJELL(ET) DOLOMITE

(Orvin 1934)

See Steenfjellet Formation.

A.M.Teben'kov

STEENFJELLET FORMATION ("SVITA")

*Lt. Proterozoic

(Harland et al. 1966, Krasil'shchikov 1973*, Harland et al. 1979)

Named from a mountain on central Brøggerhalvøya.

The middle formation of the Kongsvegen Group. It rests conformably (?) between schists and quartzites of the Nielsenfjellet and Bøgegga formations. It is composed of dolomitic marbles and dolomites. The thickness is 200-250 m.

A.M.Teben'kov

STEINVIKSKARDET BEDS ("SLOI")

E. Riphean ?

(Birkenmajer 1960)

Named from a mountain pass north of Hornsund.

Occur locally in the stratotype area. They are distinguished within the Eimfjellet Formation as transitional beds between the quartzitic and the amphibolitic divisions. The rocks are chlorite-actinolite schists with quartzite

intercalations. The thickness is 100 m. The metamorphic degree is greenschist facies.

A.M.Teben'kov

STEINVIKSKARDET FORMATION

E. Riphean (?)

(Birkenmajer 1975)

In the scheme by Birkenmajer (1975) it is defined as the second formation from below of the Eimfjellet Group.

See Steinvikskardet Beds.

A.A.Krasil'shchikov

ST. JONSFJORDEN GROUP ("GRUPPA")

M.- Lt. Riphean

(Harland et al. 1979)

Named from a fjord on the western coast of Spitsbergen. It occurs in Oscar II Land.

The St.J. Group comprises 4 formations of approximately equal thickness: the lower, mixed carbonate and clastic Trondheimfjella Formation, the dolomitic Moefjellet Formation, the quartzitic/volcanic Løvliebreen Formation and the upper, calcareous Alkhorn(et) Formation. The total thickness is 3800 m. The two upper formations are overlain by Vendian conglomerates of the Comofortlessbreen Group with a stratigraphical unconformity. The lower formations are confined to tectonically isolated areas. Their metamorphic grade differs considerably from that of the underlying (?) schists of the Kongsvegen Group. According to its stratigraphical position, the St.J. Group may be correlated to the Calc-argillo-volcanic Formation (Hjelle 1979).

A.A.Krasil'shchikov, S.I.Turčenko

STUBENDORFFBREEN SUPERGROUP ("NADGRUPPA")

E. Proterozoic

(Harland et al. 1966)

From Stubendorffbreen, a glacier in southwestern Ny Friesland.

Western Ny Friesland. This supergroup unites mainly amphibolite facies gneisses and plagiogneisses, migmatites, amphibolites, quartzites, marbles and mica schists. The total thickness is 10,000 m. No fossils are found. The base of the succession is not exposed. It is conformably overlain by carbonate-clastic rocks of the Lomfjorden Series. It includes (in ascending order) the Finnlandveggen, Harkerbreen and Planettfjella groups (see respective index words). The two lower were later summarized as the "Atomfjella" Series, while the upper group was renamed "Mossel Series" after the area of its most complete development (Krasil'shchikov 1970).

S.A.Abakumov

STÖRMERFJELLET SCHISTS

(Harland & Wilson 1956)

See Smutsbreen Formation.

S.A.Abakumov

STÖRMERFJELLET "SVITA" (FORMATION)

E. Proterozoic

(Abakumov 1965)

Named from a mountain in southwestern Ny Friesland.

The upper formation of the Finnlandveggen Formation. The "svita" consists of garnetiferous two-mica gneisses and marbles. The thickness is 800-1000 m. It corresponds to the earlier distinguished Smutsbreen Formation (Harland & Wilson 1956; see above).

S.A.Abakumov

SUTORFJELLA CONGLOMERATE MEMBER ("TOLŠČA")

Silurian ?

(Harland et al. 1979)

Named from a mountain ridge on the northwestern coast of Prins Karls Forland.

Developed only on Sutorfjella. There occur coloured, coarse block conglomerates; within the coarse clastic material quartzite is prevailing, as well as siltstones and black argillites. The thickness is not defined. The conglomerates overlie a unit of green argillites, alternating with dolomitic quartzites, which resemble the upper unit of the Conqueror Formation. Harland et al., following Atkinson (1960) included it into the Barents Formation, and correlated it with the Bulltinden Conglomerate Member, in which a Silurian fossils have been found (Harland et al. 1979). The S. Member had previously been correlated with conglomerates of the Devonian

Red Bay Series (Hoel 1914, Craig 1916), or with Tertiary conglomerates of central Prins Karls Forland (Tyrrell 1924).

A.A.Krasil'shchikov

SVANBERGFJELLET BEDS

(Harland & Wilson 1956)

See Svanbergfjellet Formation.

A.A.Krasil'shchikov

SVANBERGFJELLET COLLENIA BEDS

(Wilson 1961)

See Svanbergfjellet Stromatolitic Dolomite Division.

A.A.Krasil'shchikov

SVANBERGFJELLET DOLOMITE DIVISION ("TOLŠČA")

Lt. Riphean

(Harland et al. 1966; S. Dolomites: Wilson 1961).

The lower division of the Svanbergfjellet Formation, resting conformably between limestone divisions of the Grusdievbreen (below) and Svanbergfjellet formations. There occur light grey dolomites and dolomite limestones with cherts, and in the upper part thin quartzites and argillaceous slate intercalations. The thickness is 150 m. There occur stromatolites and microphytolite complexes of Late Riphean age (Raaben & Zabrodin 1969).

A.A.Krasil'shchikov

SVANBERGFJELLET DOLOMITES

Lt. Riphean

(Wilson 1961)

See Svanbergfjellet Dolomite Division.

A.A.Krasil'shchikov

SVANBERGFJELLET FORMATION ("SVITA")

*Lt. Riphean

(Harland et al. 1966, Krasil'shchikov 1973*)

Named from a mountain in western Olaf V Land.

Southern end of the mountain massif between the glaciers Lomonosovbreen, Akademikerbreen and Polarisbreen in the north. This is the second formation from below of the Akademikerbreen Group, and is conformably overlain by dolomites of the Draken Formation. The S. Formation is essentially carbonate and in the stratotype section four divisions can be distinguished: dolomite, lower limestone, stromatolitic dolomite and upper limestone. The total thickness of the formation diminishes northwards from 625 m to 100 m owing to attenuating limestones within the succession. The dolomites contain stromatolites and microphytolites of Late Riphean age (Raaben & Zabrodin 1969).

A.A.Krasil'shchikov

SVANBERGFJELLET, LOWER LIMESTONE DIVISION ("TOLŠČA")

Lt. Riphean

(Harland et al. 1966; Lower S. Limestones: Wilson 1961)

The second division from below of the Svanbergfjellet Formation, resting conformably between the dolomite divisions. There occur massive, dark limestones, in the upper part alternating with light dolomites. At the base of the division a characteristic horizon of thinly wavy-bedded limestones (30-60 m), the Bolster Beds (Wilson 1961), appears. The thickness of the division is about 130 m. No determinable fossils are found.

A.A.Krasil'shchikov

SVANBERGFJELLET, LOWER LIMESTONES

(Wilson 1961)

See Svanbergfjellet, Lower Limestone Division.

A.A.Krasil'shchikov

SVANBERGFJELLET, UPPER LIMESTONE DIVISION ("TOLŠČA") Lt. Riphean
(Harland et al. 1966)

The upper division of the Svanbergfjellet Formation, resting conformably upon the stromatolitic dolomite division and conformably being overlain by dolomites of the Draken Formation. There are alternating dark oolitic limestones, dolomitic limestones, coloured silty limestones and siliceous-dolomitic rocks. The total thickness is 115 m. Badly preserved stromatolites occur.

A.A.Krasil'shnikov

SVANBERGFJELLET, UPPER LIMESTONES
(Wilson 1961)

See Svanbergfjellet, Upper Limestone Division.

A.A.Krasil'shnikov

SVANBERGFJELLET STROMATOLITIC DOLOMITE DIVISION ("TOLŠČA") Lt. Riphean
(Harland et al. 1966)

Lies conformably between the lower and upper limestone divisions of the Svanbergfjellet Formation, consisting of massive, usually ferruginous stromatolitic dolomites with thin intercalations of coloured cherty-argillaceous shales. The thickness diminishes northwards from 230 m to 50 m. There occur various Late Riphean stromatolites and microphytolites (Raaben & Zabrodin 1969).

A.A.Krasil'shnikov

SVEANOR "SVITA" (FORMATION)
(Krasil'shnikov 1965; after Kulling 1934)

Vendian

Named from a point on the southern coast of the Murchisonfjorden.

Western Nordaustlandet. This is the middle formation of the Gotia "Serija". Generally, it lies conformably between the Backaberg(et) and Klackbergbukta "svita"s. Locally, an erosive contact is observed at the base. It contains two divisions; lower (40-60 m) light, medium- to coarse-grained quartz sandstones, and upper (up to 70 m) dark, fine- to medium-grained sandstones and siltstones with unevenly distributed gravel and pebble material. The thickness of the formation is 50-130 m. No fossils. Most scientists assume a glaciomarine origin of the rocks of the Sveanor "Svita", and correlate it with the Late Precambrian (Vendian, Eocambrian) tillites of Scandinavia and Greenland.

A.M.Teben'kov

SÄLODD* SERIES
(Kulling 1934)

See Sälodd(en) "Svita".

A.A.Krasil'shnikov

* The modern spelling is Selodden. The editor.

SÄLODD* "SVITA" (FORMATION)

Lt. Riphean (?)

(Krasil'shnikov 1965, 1973; S. Series: Kulling 1934)

Named from a point on the southern coast of Murchisonfjorden.

Western Nordaustlandet. This is the lower formation of the upper "podserija" of the Murchison Bay "Serija". It has a transitional boundary with the under- and overlying Raudstup(et) and Hunnberg(et) formations. There occur greenish-grey silty dolomite and dolomitic limestone, the latter containing badly preserved microphytolites. The thickness is 200 m.

A.A.Krasil'shnikov

* The modern spelling is Selodden. The editor.

SØRBREEN FORMATION ("SVITA")

*E. Proterozoic

(Harland et al. 1966, Krasil'shnikov 1973*; S. Series: Harland & Wilson 1956)

Named from a glacier at the central western coast of Ny Friesland.

Western coast of Ny Friesland. This is the uppermost formation of the Atomfjella "Serija" (Harkerbreen Group). It was originally defined as a division of undefined stratigraphical position (Harland & Wilson 1956). It consists of light quartzites, quartzitic gneisses and plagiogneisses with conformable beds of amphibolites, and

thin intercalations of metatuffs of acidic composition. The observed thickness is 250-265 m.

S.A.Abakumov

SØRBREEN QUARTZITES

(Harland & Wilson 1956)

See Sørbreen Formation.

S.A.Abakumov

SØRBREEN SERIES

(Harland & Wilson 1956)

See Sørbreen Formation.

S.A.Abakumov

SØRHAMNA "SVITA" (FORMATION)

Vendian ?

(Krasil'shikov & Livšic 1974)

From Sørhamna, a bay on the southeastern coast of Bjørnøya.

Bjørnøya, southeastern part. It is the middle part of the Hecla Hoek Complex on Bjørnøya, resting unconformably upon the Riphean dolomites of the Russehamna "Svita". It is overlain by Ordovician dolomites with an angular unconformity. It consists of argillites, siltstones and sandstones. In the stratotype one can distinguish two subformations, a lower essentially argillaceous one (55-60 m), and an upper silty sandstone (65 m). The argillites are greenish-grey and dark grey, sericitized, sometimes cross-bedded. In the lower part of the succession quartz sandstone intercalations and pyrite concretions occur. In the upper part, there are alternating siltstones and quartzitic sandstones, the latter prevailing at the upper levels. In the middle part a division of green argillites (16-20 m) occurs. The total thickness of the "svita" is about 125 m. No fossils are found. A Vendian age is assumed by convention (Krasil'shikov & Livšic 1974).

S.A.Abakumov

SØRKAPP LAND FORMATION ("SVITA")

(Birkenmajer 1958, Krasil'shikov 1973)

See Sørkapp Land "Serija".

A.M.Teben'kov

SØRKAPP LAND GROUP

(Birkenmajer 1978b)

See Sørkapp Land "Serija".

A.M.Teben'kov

SØRKAPP LAND "SERIJA" (GROUP)

E.- M.? Ordovician

(Krasil'shikov 1976, Birkenmajer 1978b)

Named from a area in southern Svalbard.

The S.L. "Serija" occurs in western Sørkapp Land and eastern Wedel Jarlsberg Land. The lower boundary is a stratigraphical unconformity upon the Cambrian Sofiekammen "Serija". It is overlain by Devonian, E. Carboniferous or E. Triassic deposits with a structural unconformity. It is divided into five formations; the Wiederfjellet Quartzites at the base, followed by the Luciapynten Dolomites, the Dusken and Hornsuntind limestones, and the Arkfjellet slates on top. The total thickness is 1400 m. The three lower formations cannot be dated by fossils, while the upper two limestone formations contain gastropods, brachiopods and nautiloids of Early Ordovician (Canadian) age. The age of the Arkfjellet Formation (Series) is not defined.

A.M.Teben'kov

T

TETRADIUM LIMESTONE

(Holtedahl 1920).

See Ymerdalen "Svita" (the upper 'subformation').

A.A.Krasil'shchikov

Lt. Ordovician

TILLITIC CONGLOMERATE

(Hjelle et al. 1979)

See Comfortlessbreen Group.

A.A.Krasil'shchikov, S.I.Turčenko

Vendian

TILLOID UNIT ("TOLŠČA")

(Harland 1978)

Defined by Harland (1978) as the upper member of the Precambrian succession to the north of Hornsund (southern Wedel Jarlsberg Land). The unit combines several divisions of slaty conglomerates earlier attributed by Birkenmajer to the Slyngfjellet Unit (see above).

A.A.Krasil'shchikov

M. Riphean ? - Vendian

TOKAMMANE DOLOMITE "PODSVITA" ('SUBFORMATION')

(Krasil'shchikov 1973; Lower and Upper Dolomite Division: Harland et al. 1966)

The upper "podsvita" of the Tokammane Formation of the Oslobreen Series. It lies conformably upon sandstones of the lower "podsvita" and is conformably overlain by Early Ordovician limestones of the Kirtonryggen Formation. The lower part of the "podsvita" (Lower Dolomite Division, 65 m thick) is composed of thinly laminated, fine-grained dolomites, containing Early Cambrian cephalopods, *Salterella* cf. *rugosa* Billings. In the upper part (Upper Dolomite Division, 100-145 m), alternating platy dolomites and dolomitic siltstones and argillites occur, the latter containing inarticulate brachiopods. The total thickness of the dolomite "podsvita" is 165-200 m.

A.A.Krasil'shchikov

Cambrian

TOKAMMANE, LOWER DOLOMITE DIVISION

(Harland et al. 1966)

See Tokammane Dolomite "Podsvita".

A.A.Krasil'shchikov

TOKAMMANE, UPPER DOLOMITE DIVISION

(Harland et al. 1966)

See Tokammane Dolomite "Podsvita".

A.A.Krasil'shchikov

TOKAMMANE FORMATION ("SVITA")

(Harland et al. 1966, Krasil'shchikov 1973*)

Named from a ridge in southeastern Ny Friesland.

Southeastern and southwestern Olaf V Land. This is the lower formation of the Oslobreen Series, apparently conformably, but with a sharp boundary overlying argillaceous siltstones of the Vendian Polarisbreen Series. It is conformably overlain by Ordovician dolomites of the Kirtonryggen Formation. It consists of two 'subformations', lower sandstones (15-45 m), and upper dolomites (165-200 m). The total thickness of the formation is 180-245 m. Fucoids have been found in the sandstones, and Early Cambrian cephalopods, as well as inarticulate brachiopods in dolomites.

A.A.Krasil'shchikov

*Cambrian

TOKAMMANE SANDSTONE "PODSVITA" ('SUBFORMATION')

(Krasil'shchikov 1973; T. Sandstone Division: Harland et al. 1966)

The lower "podsvita" of the Tokammane Formation of the Oslobreen Series. It lies apparently conformably, though with a sharp boundary, upon argillaceous siltstones of the Polarisbreen Series, and is conformably

E. Cambrian?

overlain by the dolomite "podsvita" of the Tokammane Formation. The "podsvita" is composed of massive, white quartzites with some bands of green glauconite-quartz sandstones. The thickness is 15–45 m. Wilson found some tubular fragments in the sandstones, resembling *Monocraterion tantaculatum* Torrell of Early Cambrian age (Gobbet & Wilson 1960)

A.A.Krasil'shchikov

TONEDALEN FORMATION

(Birkenmajer 1975)

See Tonedalen Member.

A.M.Teben'kov

TONEDALEN MEMBER ("TOLŠČA")

E.?- M. Riphean

(Birkenmajer 1975)

Named from a valley in the mountain massif between the glaciers Werenskiöldbreen and Torellbreen on Spitsbergen (Birkenmajer 1958).

Occurs locally in the stratotype area; the lower member of the Deilegga Formation ("Lower Series of Deilegga Formation", Birkenmajer 1958). A stratigraphical (?) unconformity is supposed at the base (Birkenmajer 1959, 1975). It is conformably, with a transitional boundary, overlain by the middle slate division of the Deilegga Formation. At the base quartz conglomerates occur, upward followed by dolomites. The bulk of the member consists of phyllites (sericitic-quartzite and chlorite-quartz slates). The thickness is 1200 m.

A.M.Teben'kov, A.A.Krasil'shchikov

TOPIGGANE SHALE (MEMBER)

E. Cambrian

(Swett 1981)

Named from a synonymous nunatak of the eastern part of the Ny Friesland Peninsula.

Occurs locally near the stratotype, on both sides of the Oslobreen glacier. The unit lies conformably between the sandstones and the dolomites of the Tokammane Formation. Greenish-grey argillites and glauconitic and dolomitic sandstones are interlayered. The thickness is 22 m. The T.S. Member corresponds to the upper part of the Tokammane Sandstone "Podsvita".

A.A.Krasil'shchikov

TORBJØRNSFJELLET AMPHIBOLITE FORMATION ("FORMACIJA")

(Birkenmajer 1975)

Named from a mountain on the northern side of the mouth of Hornsund.

The lower division of the Skålfjellet Series (Subgroup), consisting of amphibolites (actinolitized diabases) and biotite-amphibolite schists. The occurrence is local. As igneous intrusive rocks prevail in the formation, it has no lithostratigraphical significance.

A.A.Krasil'shchikov

TORDENRYGGEN QUARTZITES

(Harland & Wilson 1956)

See Tordenryggen "Svita".

S.A.Abakumov

TORDENRYGGEN "SVITA" (FORMATION)

E. Proterozoic

(Abakumov 1965, Harland et al. 1966)

Named from a ridge in southwestern Ny Friesland.

Occurs in the stratotype area. This is the upper member of the Harkerbreen Formation. It has a transitional boundary with the underlying, essentially gneissose Bleikfjellet "Svita". The upper boundary is not exposed. Light, micaceous quartzites and plagiogneisses with amphibolite intercalations and lenses occur. The thickness is 500–1000 m.

S.A.Abakumov

TORELLBREEN SUPERGROUP ("NADGRUPPA")
(Birkenmajer 1975)

Late part of E. and early
part of Lt. Proterozoic

From the largest glacier of southwestern Spitsbergen.

In the scheme by Birkenmajer (1975), this supergroup unites three groups, the Isbjørnhamna Group consisting of schists (upper part of Lower Proterozoic), the Eimfjellet Group of amphibolites, chloritic schists, phyllites and quartzites (Early Riphean?) and the Deilegga Group with phyllites, conglomerate intercalations, quartzite and dolomite bands (Early-Middle Riphean?). The total thickness of the supergroup is up to 1200 m. It seems not expedient to collect the differently metamorphic units of different ages in a single stratigraphical complex. The term is superfluous.

A.A.Krasil'shnikov, A.M.Teben'kov

TRONDHEIMFJELLA FORMATION ("FORMACIJA")
(Harland et al. 1979)

M. Riphean ?

Named from a mountain in northern Oscar II Land.

Occurs in northern Oscar II Land. The terigenous-carbonate T. Formation is divided into three units. The upper one (over 200 m) is characterized by alternating quartzites, sandstones and dolomites with calcareous conglomerate intercalations; the middle one (300 m) is composed of phyllites, the lower one (500 m) of schistose marbles. It has a transitional boundary with the overlying Moefjellet Formation. The lower boundary is tectonic. It may be correlated with the lower part of Bjørvigfjellet Formation (see above; Challinor 1967) and comprises parts of the Forlandsundet dolomites and limestones (Orvin 1934).

A.A.Krasil'shnikov, S.I.Turčenko

TSJEBYSJOVFJELLET LIMESTONES
(Major & Winsnes 1955)

E. Ordovician

See Tsjebysjovfjellet "Tolšča".

A.M.Teben'kov

TSJEBYSJOVFJELLET LIMESTONE MEMBER
(Birkenmajer 1975, 1978b)

E. Ordovician

See Tsjebysjovfjellet "Tolšča".

A.M.Teben'kov

TSJEBYSJOVFJELLET "TOLŠČA" (MEMBER)
(Krasil'shnikov 1973)

E. Ordovician

Named from a mountain massif in Sørkapp Land (Major & Winsnes 1955).

Tsjebysjovfjellet area at Hornsund in Sørkapp Land. This is the upper member of the Hornsundtind Formation. It has a transitional boundary with the underlying limestones of the Raudstupet Member. It is overlain by Devonian and younger deposits with a structural unconformity. Massive, light and dark grey to black limestones occur. The thickness is 400 m. Gastropods, brachiopods, nautiloids and bryozoans of Early Ordovician (Late Canadian) age are found.

A.M.Teben'kov

TÅBREEN MEMBER ("TOLŠČA", "SUBFORMACIJA")
(Harland et al. 1966, Wallis 1969, Krasil'shnikov 1973*)

*E. Riphean

Named from a glacier in northern Ny Friesland.

Recognized in the stratotype area as the lower member of the Vildadalen Formation, resting conformably between the Flåen Formation and the overlying slates of the Ålryggen Member. The rocks are alternating marmorized limestones, muscovite quartzites and microcrystalline garnet-mica schists. The thickness is 750 m.

S.A.Abakumov

U

UPPER LIMESTONE FORMATION ("FORMACIJA")

Ordovician ?

(Orvin 1934)

Distinguished by Orvin as an independent carbonate member, developed in the inner part of Kongsfjorden and on Blomstrandhalvøya. The tentative thickness is 1600 m. Since, other scientists have included it into the Generalfjella Formation (see above).

A.A.Krasil'shchikov

UTNES FORMATION ("FORMACIJA")

Silurian ?

(Harland et al. 1979)

Named from a point in central western coast of Prins Karls Forland.

Developed in the stratotype area. It is the lowermost formation of the Grampian Group. It has a transitional boundary with the under- and overlying formations (Royshaugen and Conqueror formations). Grey slates with thin quartzite intercalations occur. The slates become darker down-section, and the pyrite content in the quartzites increases. No fossils are found. The thickness is 80 m.

A.A.Krasil'shchikov

V

VALHALLFONNA FORMATION ("SVITA")

E.- M. Ordovician

(Vallance & Fortey 1968)

Named from a glacier in northeastern Ny Friesland.

Northwestern coast of Hinlopenstretet. This is the uppermost formation of the Oslobreen Series and the entire Hecla Hoek Complex. It lies conformably, though with a sharp boundary, upon the Early Ordovician limestones of the Nordporten Member of the Kirtonryggen Formation. The upper boundary is not exposed. Dark limestones with bituminous and graptolitic shales occur. The thickness is 225 m. It is divided into two members distinguished by composition and fauna associations: the lower Olenidsletta Member (E.- Lt. Arenig) and the upper Profilbekken Member (Lt. Arenig - Llanvirn).

A.A.Krasil'shchikov

VALHALLFONNA, LOWER LIMESTONE DIVISION

(Vallance & Fortey 1968)

See Olenidsletta Member.

A.A.Krasil'shchikov

VALHALLFONNA, UPPER LIMESTONE DIVISION

(Vallance & Fortey 1968)

See Profilbekken Member.

A.A.Krasil'shchikov

VARDEPIGGEN "PODSVITA"* (FORMATION)

E. Cambrian

(Birkenmajer 1975, 1978a)

Named from a summit in Wedel Jarlsberg Land, West Spitsbergen.

Southern Wedel Jarlsberg Land. This is the lower "podsvita" of the Slakli Series (Birkenmajer 1960). The lower and upper boundaries are conformable, though lenses of sedimentary breccias are observed at the base (local erosion?). It is subdivided into three members: the lower Olenellusbreen Member consisting of green and black shales with lenses of calcareous, silty sandstones and sedimentary breccias (44-350 m), the middle Midifjellet Member, composed of dark, often shaley limestones (20-55 m), and the upper Flogtoppane Member consisting of dark and often graphitic shales, dolomites and limestones (30-100 m). The total thickness of the formation increases southwards from 110-130 to 420-450 m. The lower member contains olenellides of late Early Cambrian age.

A.A.Krasil'shchikov, A.M.Teben'kov

* first introduced as "podsvita" rank here.

VASSFARET FORMATION ("SVITA")

*E. Proterozoic

(Gayer & Wallis 1966, Harland et al. 1966, Krasil'shchikov 1973*)

Named from a group of small lakes in northwestern Ny Friesland.

Northwestern part of Ny Friesland. This is the next lowest formation of the Atomfjella Series (Harkerbreen Group). It rests conformably between the Bangenhuk(en) and Sørbreen formations. There are three different divisions within the stratotype: garnet-biotite schists alternating with plagiogneisses and migmatites (240 m), porphyroblastic calcite-amphibole-garnet schists and banded epidotic plagiogneisses (40m), biotitic plagiogneisses with thin laminae of migmatites and carbonaceous schists (320 m). Throughout the whole succession there are conformable beds of amphibolite. The total thickness is 600 m.

S.A.Abakumov

VESTGÖTABREEN FORMATION (SUITE, "FORMACIJA")

E. Riphean ?

(Suite: Horsfield 1972; V. Fm.: Harland et al. 1979, Hjelle et al. 1979)

Named from a glacier south of St. Jonsfjorden, West Spitsbergen.

Occurs locally in central Oscar II Land, between St. Jonsfjorden and Eidembukta. It lies as a thrust sheet (some hundred meters) among the rocks of the E. Paleozoic Bullbreen Group. It consists of closely alternating muscovite-quartz and carbonate schists, limestones and dolomites, glaucophane-containing schists and metabasic rocks (epidote-actinolite rocks, serpentinites and eclogites). Its stratigraphical position is not clear. Possible correlations are with the Calc-argillo-volcanic Formation or with the older Eimfjellet Formation (Hjelle et al. 1979). Alternatively, it may belong to the Bullbreen Series, considering the spacial relationship between the two units (Harland et al. 1979).

A.A.Krasil'shchikov, S.I.Turčenko

VETERANEN GROUP ("PODSERIJA", "GRUPPA")

*M.- Lt. Riphean

(Harland et al. 1966, Krasil'shchikov 1973*).

Named from a glacier in central Ny Friesland.

Ny Friesland Peninsula, Olaf V Land. This is the lower, essentially clastic part of the Lomfjorden Series, conformably (?) resting upon schists of the Mossel "Serija" (E. Riphean?) and conformably overlain by Lt. Riphean limestones of the Grusdievbreen Formation (Akademikerbreen Group). It is divided into (in ascending order) the Kortbreen, Kingbreen, Glasgowbreen and Oxfordbreen formations. In the lower parts of the upper formation stromatolites and microphytolites of Late Riphean age are found (Raaben & Zabrodin 1969).

A.A.Krasil'shchikov

VETERANEN LIMESTONES

(Harland & Wilson 1956)

See Kortbreen, Lower "Podsvita".

A.A.Krasil'shchikov

VETERANEN QUARTZITES

(Harland & Wilson 1956)

See Kortbreen, Upper "Podsvita".

A.A.Krasil'shchikov

VETERANEN, LOWER SERIES

(Harland & Wilson 1956)

Converted into formation rank in a subsequent British scheme (Kortbreen Fm.; Harland et al. 1966). It has been divided into Veteranen Limestones and Veteranen Quartzites (see above).

See Kortbreen Formation.

A.A.Krasil'shchikov

VETERANEN, MIDDLE SERIES

(Harland & Wilson 1956)

Converted into formation rank in a subsequent British scheme (Kingbreen Fm.; Harland et al. 1966). It has been divided into three units, the lower Galoistoppen Beds, the middle Cavendishrygen Limestones and the upper

Cavendishryggen Quartzites.
See Kingbreen Formation.
A.A.Krasil'shchikov

VETERANEN, UPPER SERIES

Lt. Precambrian

(Harland & Wilson 1956)

In the latest British scheme this unit is transferred into formation rank (Glasgowbreen Fm.: Harland et al. 1966). It is divided into two parts: the lower Glasgowbreen Quartzites, and the upper Glasgowbreen Greywackes.

See Glasgowbreen Formation.
A.A.Krasil'shchikov

VILDADALEN FORMATION ("SVITA")

*E. Riphean ?

(Harland et al. 1966, Wallis 1969, Krasil'shchikov 1973*)

Named from a synonymous, E-W trending valley in northern Ny Friesland.

Occurs in the central, watershed-part of the Ny Friesland peninsula. This is the upper formation of the Mossel "Serija". It lies conformably upon the shales of the Flåen Formation. The upper contact is normally tectonic. It is divided into two 'subformations' of approximately equal thickness (1500 to 1800 m). The lower 'subformation' (involving the Tåbreen, Ålryggen and Ålbreen members of the British scheme, Harland et al. 1966) is characterized by marmorized limestones and dolomites. The upper 'subformation' (Rosenfjella 'Subformation') is mainly composed of dark phyllites with lenticular quartz segregations. The lithological resemblance of the alternating divisions suggests a repetition of the succession in a fold structure.

A.A.Krasil'shchikov

VIMSODDEN SERIES ("SERIJA")

(Birkenmajer 1958)

See Vimsodden "Svita".

A.A.Krasil'shchikov

VIMSODDEN SUBGROUP ("PODGRUPPA")

E. Riphean ?

(Birkenmajer 1975)

Regarded by Birkenmajer as a stratigraphical equivalent of the Skålfjellet amphibolite subgroup, which is a part of the Eimfjellet Group (formation) (see above). In one of his latest papers Birkenmajer (1975) divides the V. Subgroup into two formations. The lower one (Nottinghambukta Fm.) is composed of phyllites and mica schists and tilloidal and rhyolitic conglomerates. The upper one (Elveflya Fm.) consists of alternating quartz-mica schists, phyllites and metasiltstones which include tilloids, quartzite and amphibolite lenses. Birkenmajer (1975) estimates the total thickness of the subgroup to 3550 m.

See Vimsodden "Svita".

A.A.Krasil'shchikov

VIMSODDEN "SVITA" (FORMATION)

E. Riphean

(Krasil'shchikov & Kovaleva 1976, Harland & Wright 1979)

The name is given by Birkenmajer (1958) from a point on the western coast of Spitsbergen, north of Hornsund.

Western coast of Spitsbergen from Hornsund northward to Engelsbukta. This is the middle, clastic/volcanic formation of the Werenskioldbreen "Serija". In the stratotype region at the base of the formation, the Gulliksenfjellet Quartzite Member (see above) occurs. The main lithologies of the formation are green carbonate-mica and chlorite schists as well as carbonaceous schists with subordinate bands of quartzites and dolomites; in the Vimsodden area there are lenses of quartzite and dolomite conglomerates. Different estimates are given of the total thickness of the formation: 700-800 m (Krasil'shchikov & Kovaleva 1976) and 3550 m (Birkenmajer 1975). The stratigraphic position of the formation is not quite clear either. In the scheme of Krasil'shchikov & Kovaleva (1976) it rests conformably between the volcanic Skålfjellet Formation and the argillaceous-carbonaceous Dunderbukta Formation. Birkenmajer (1958, 1960, 1975) regards the Vimsodden Series (Subgroup) as stratigraphically equivalent to the Skålfjellet "Amphibolite Series" (Subgroup). According to Smulikowski (1968), the V. Series is overlying the Skålfjellet amphibolites; the same point of view is found in the work of Harland & Wright (1979).

A.A.Krasil'shchikov

VIMSODDEN "TOLŠČA" (MEMBER)

(Krasil'shikov 1973)

See Vimsodden "Svita".

A.A.Krasil'shikov

VÅRSOLBUKTA UNIT ("TOLŠČA")

(Harland 1978)

Riphean ?

Named from an inlet on the northern side of Bellsund, West Spitsbergen.

This unit is common within the stratotype area. It is composed of dark massive limestones, in the upper part with green phyllite bands. The thickness is about 1500 m. It conformably overlies tilloid rocks of the Millarodden Member (see above) though Harland (1978) suggested the unit to be inverted.

A.A.Krasil'shikov

W

WAGGONWAYBREEN "SVITA" (FORMATION)

(Abakumov 1976)

E. Proterozoic ?

Named from a glacier in northwestern Spitsbergen.

Albert I Land. The formation is recognized as the lower, essentially magnesian part of the Smeerenburgfjorden Group. The base of the succession is unknown. The boundary with the overlying (?) Kollerbreen Formation is tectonic. There are biotite, biotite-garnet and biotite-amphibole gneisses and plagiogneisses, amphibolite lenses, marble horizons, migmatites and syngenetic granitoids. The metamorphic grade is amphibolite facies, locally granulite facies assemblages occur. The tentative thickness is 7000 to 8000 m.

S.A.Abakumov

WERENSKIOLDBREEN "SERIJA" (GROUP)

(Krasil'shikov & Kovaleva 1975)

E. Riphean ?

From Werenskioldbreen (glacier) in Wedel Jarlsberg Land, West Spitsbergen.

Western coast of Spitsbergen between Hornsund in the south and Engelsbukta in the north. This "serija" is considered to be a sedimentary-volcanic complex formed during one tectonic cycle and metamorphosed in greenschist facies. It represents a typical geosynclinal succession consisting of three formations, a volcanic (Skålfjellet Fm.), a clastic-volcanic (Vimsodden Fm.) and an argillaceous-carbonaceous one (Dunderbukta Fm.). The group has a total thickness of about 2000 m. The lower contact is tectonic; the upper boundary with the flyschoid-carbonaceous Sofiebogen Group is lithologically sharp, but without indications of an unconformity. Poorly preserved microphytolites are found in the dolomites of the upper formation.

A.A.Krasil'shikov

WESTBYFJELLET MARBLE

(Harland & Wilson 1956)

See Westbyfjellet Member.

S.A.Abakumov

WESTBYFJELLET MEMBER ("TOLŠČA")

(Harland et al. 1966, Krasil'shikov 1973*)

*E. Proterozoic

Named from a mountain in southwestern Ny Friesland.

Common within the stratotype area. It is the upper member of the Smutsbreen Formation and rests conformably between the underlying homogeneously gneissose Bohrryggen Member and the leucocratic plagiogneiss unit of the Harkerbreen Formation. The member consists of alternating units of schistose garnet-mica gneisses and plagiogneisses with marbles and calcareous rocks. The thickness is 500 m.

S.A.Abakumov

WESTMANBUKTA FORMATION ("SVITA")

(Flood et al. 1969)

M. Riphean ?

Named from a bay on the northwestern coast of Nordaustlandet.

Western and central parts of Nordaustlandet. Next to the lowest formation of the Murchison Bay Series. It rests conformably between the Persberget and Kapp Lord formations. There are green and red argillites, fine-grained sandstones and quartzites. The thickness is 600 to 650 m. No fossils. It is introduced with a formation rank for the first time here.

A.M.Teben'kov

WIEDERFJELLET QUARTZITE FORMATION ("FORMACIJA")

E. Ordovician?

(Birkenmajer 1959)

See Wiederfjellet "Svita".

A.M.Teben'kov

WIEDERFJELLET QUARTZITES

E. Ordovician ?

(Birkenmajer 1959)

See Wiederfjellet "Svita".

A.M.Teben'kov

WIEDERFJELLET "SVITA"* ("TOLŠČA", FORMATION)

E. Ordovician?

(Krasil'shikov 1973; Wiederfjellet Quartzite Fm.: Birkenmajer 1975)

Named from a mountain in Sørkapp Land.

Occurs locally N and S of Hornsund. This is the lower formation of the Sørkapp Land Group resting unconformably upon the Cambrian deposits and conformably overlain by dolomites of the Luciatoppen Formation. It consists of two members (Birkenmajer 1978b), a lower one with dolomitic sandstones and quartzites ("Paierlbreen Member", see above) and an upper one with argillaceous/calcareous schists containing quartzite, limestone and dolomite bands (Goesbreen Member). The total thickness of the formation is 150 to 200 m.

A.M.Teben'kov

* first introduced as "svita" rank here.

WILSONBREEN FORMATION ("SVITA")

*Vendian

(Harland et al. 1966, Krasil'shikov 1973*)

From the glacier Wilsonbreen in northwestern Olaf V Land.

Eastern Ny Friesland and western Olaf V Land. This is the middle formation of the Polarisbreen Series, conformably resting between the shales of the Elbobreen and Drakoisén formations. The foot and the top of the W. Formation are marked with persistent light dolomite beds. The bulk of the formation is represented by tilloid deposits ("tillites"; Harland et al.), massive and slaty dark grey sandy to silty rocks with spread coarse clastic material, mainly of local origin. In the Akademikerbreen area Wilson defined two "tillite" horizons, 100 and 60 m thick, separated by a 70 m thick shale division (Wilson & Harland 1964). The thickness of W. Formation varies from 100 to 240 m.

A.A.Krasil'shikov

WURMBRANDEGGA MEMBER ("TOLŠČA")

M.- Lt. Riphean

(Birkenmajer 1972)

Named from a mountain ridge on the southern side of Hornsund, West Spitsbergen.

Occurs locally along the western coast of Spitsbergen, from Hornsund northward to St. Jonsfjorden. It is the third member from below of the Höferpynten Formation. The lower and upper boundaries with the Andvika and Dunøyane members, respectively, are conformable; facies transitions occur. The rocks are dolomites and sedimentary breccias. The thickness of the member is 350 m. There are Middle to Late Riphean microphytolites and, though rarely, stromatolites.

A.M.Teben'kov

Y

YMERDALEN "SVITA" (FORMATION) (Krasil'shchikov & Livšic 1974)

M.- Lt. Ordovician

Named from a valley on southern Bjørnøya.

Occurs on the southern extremity of Bjørnøya. This is the upper part of the Hecla Hoek Complex on Bjørnøya. It overlies clastic rocks of the Vendian(?) Sørhamna Formation with a structural unconformity, and is overlain by a Late Devonian coal-bearing unit with an erosive and structural unconformity. Dolomites and limestones occur. They are divided into 3 "podsvita"s; a lower dolomite (more than 250 m), a transitional (40-100 m) and an upper limestone (9100 m). The lower "podsvita" ("Younger Dolomite Series", Holtedahl 1920) consists of massive dolomites with bands and lenses of black chert. The middle (transitional) "podsvita" (lower horizons of the "Tetradium Limestone", Holtedahl 1920) represents alternating dolomites and limestones in a varying order. The upper "podsvita" (the upper part of the "Tetradium Limestones", Holtedahl 1920) is composed of black, cleaved limestones. The total thickness is about 450 m. In the lower "podsvita" there are scarps of Middle Ordovician bryozoans; in the middle "podsvita" no determinable fossils were found; the upper "podsvita" contains Middle (?) to Late Ordovician nautiloids and corals.

A.A.Krasil'shchikov

YOUNGER DOLOMITE SERIES (Holtedahl 1920)

M. Ordovician

See Ymerdalen Formation (lower and middle 'subformations').

A.A.Krasil'shchikov

Å

ÅLBREEN MEMBER ("TOLŠČA", "SUBFORMACIJA") (Harland et al. 1966, Wallis 1969, Krasil'shchikov 1973*)

*E. Riphean (?)

Named from a small glacier on Mossel Peninsula, Ny Friesland.

Recognized in the stratotype area. It is the third member from below of the Vildadal Formation, conformably resting between essentially slates of the Ålryggen and Rosenfjella members. Alternating medium-grained biotite-quartz phyllites, quartzites, dolomites and marmorized limestones occur. The thickness is 500 m.

S.A.Abakumov

ÅLRYGGEN MEMBER ("TOLŠČA", "SUBFORMACIJA") (Harland et al. 1966, Wallis 1969, Krasil'shchikov 1973*)

*E. Riphean (?)

Named from a small ridge in the central part of Mossel Peninsula (northern Ny Friesland).

Recognized in the stratotype area. It is the second member from below of the Vildadal Formation, conformably resting between the Ålbreen and Ålbreen members. Medium- to coarse-grained garnet-mica schists occur. The thickness is 500 m.

S.A.Abakumov

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PART II

MIDDLE PALEOZOIC - CENOZOIC
(Devonian to Quaternary Systems)

INTRODUCTION

The sedimentary cover of the Svalbard archipelago comprises two structural features, i.e. post-geosynclinal and platform complexes. In the modern erosional section, these overlie almost the entire area of the archipelago, except for most of Nordaustlandet and the Ny Friesland peninsula, as well as the western coastal areas of Spitsbergen. Long-term studies of the sedimentary cover along with its good exposure have favoured major distinct lithostratigraphical units to be reliably recognized and traced along their lateral extent. Thus, the sedimentary sequence has been differentiated in sufficient detail that biostratigraphical units smaller than formations could be distinguished.

At present there are two independent stratigraphical nomenclatures elaborated for Spitsbergen by western, primarily Norwegian and English (in southern Spitsbergen by Polish) scientists on the one hand, and by Soviet scientists on the other. Since the schemes were designed almost concurrently for an essential part of the succession, both nomenclatures are referred to in the literature. It is natural that the Soviet publications are preferably based on domestic results while the western community tends to refer to Norwegian results. This is particularly true for the Devonian, Latest Paleozoic, and Mesozoic stratigraphy. The problem of elaborating a single stratigraphical nomenclature will evidently be dealt with in the near future.

Although the earliest studies of Spitsbergen geology are dated to the 19th century, the total geological data obtained were seriously summarized for the first time by A. Orvin as late as in 1940. Orvin outlined the existing views including those of sediment stratigraphy. Recent data have permitted remarkable corrections and even revisions of these stratigraphical schemes, both in terms of the extent and age of lithostratigraphical units.

The post-geosynclinal, structural complex of **Devonian** or, to be exact, Late Silurian (Pridoli) to Devonian age of an overall thickness of probably 9 km makes up a large graben in northern Spitsbergen. Some Devonian outcrops are also recorded from outside this graben, e.g. near Hornsund. It is reasonable to suggest that deposits of this age should rest at the base of the sedimentary sequence south of Isfjorden as well. However, no bore hole in southern Spitsbergen has so far penetrated these deposits. Devonian sediments form a multicoloured molasse or molasse-like unit of lagoon-continental and partly-marine origin comprising a thick conglomerate member. Within the unit six series have been recognized. Each of them (except for the Wijde Bay Series) is subdivided into formations that are well-traceable along the strike. Until now, the uppermost Mimerdalen Series, which occurs in a very complicated tectonic setting, has not been precisely determined. Devonian deposits are also known from Bjørnøya. Devonian stratigraphical schemes have been compiled by Friend (1961),

Birkenmajer (1964), Gee & Moody-Stuart (1966) and Murašov & Mokin (1976) (see Table 1).

The platform evolutionary stage beginning in the Early Carboniferous lasted until the Quaternary, when sediments were deposited under non-orogenic conditions.

The stratigraphical subdivision of **Carboniferous and Permian** deposits is based on schemes compiled by Forbes et al. (1958), Birkenmajer (1964), and Cutbill & Challinor (1965) (see Tables 2 and 3). For Bjørnøya, schemes by Horn & Orvin (1928), and Krasil'shchikov & Livšic (1974) are used. The entire Carboniferous-Permian sequence is subdivided into 3 lithostratigraphical groups. Carboniferous deposits are represented by all of these. In the modern erosional section they are predominantly exposed in the marginal parts of the Central Spitsbergen Trough. Carboniferous deposits up to 1100 m thick, unconformably overlying the lower rocks, comprise sandstones with interbeds of siltstone, argillites, conglomerates and coal seams. Middle Carboniferous deposits up to 1000 m thick contain multicoloured sandstones, argillites, siltstones, and conglomerates with interbeds of gypsum at the base of the succession and predominantly limestones and dolomites at the top. The same is true for the Upper Carboniferous deposits which vary in composition along the strike and reach a thickness of 140 m.

Permian deposits include 1) a basal monotonous dolomitic unit which is interbedded with limestone and gypsum, and 2) overlying cherts and sandstones. Permian rocks are common not only in Spitsbergen, but also on Barentsøya, Edgeøya and Nordaustlandet. Their overall thickness exceeds 1000 m. Strike-oriented variability of both Carboniferous and Permian deposits has given rise to the establishment of many lithostratigraphical units.

Mesozoic deposits are widespread in such areas as southern Spitsbergen, Edgeøya, Barentsøya, Wilhelmøya, Hopen, and Kong Karls Land. They comprise terrigenous Triassic, Jurassic, and Early Cretaceous sequences. They are also highly fossiliferous, which has allowed not only litho- but also biostratigraphical differentiation. Yet, several types of depositional successions have allowed the distinguishing of numerous lithostratigraphical units within the Mesozoic strata. Stratigraphical subdivisions of these deposits have been made by Buchan et al. (1965), Parker (1967), Mørk et al. (1982), Pčelina (1980, 1983) and a few others (see Tables 3a-7).

In the Mesozoic succession Triassic deposits are represented by all three series. The overall thickness ranges from 400 to 1100 m. These deposits are mainly bituminous argillites, siltstones, and sandstones with abundant nodules. Jurassic deposits are dominated by up to 250 m thick Late Jurassic argillites and siltstones. The depositional thickness of the two other series represented by so-called "Jurassic conglomerates" (Brentskardhaugen Bed) is commonly 5 to 7 m. The precise dating of this bed remains to be agreed upon. Cretaceous deposits are bituminous argillites and siltstones changing up-section into the quartzitic sandstones of the lower series with an overall thickness of up to 950 m. Coal seams are associated with these deposits.

Stratigraphical schemes of **Paleogene** terrigenous sediments were compiled by Nathorst (1910), Hoel (1929), Kotlukov (1936), Ljutkevič (1937), and later by Livšic (1967) and Major & Nagy (1972) (see Table 8). An alternative scheme was performed by Vonderbank (1970).

These deposits are common in southern Spitsbergen. They show a good strike-oriented persistence and are reliably divided into several formations. Some outcrops have been recorded from outside the main area of Paleogene deposits (Prins Karls Forland, Brøggerhalvøya, Bellsund). Their thickness is about 1500 m. These successions comprise sandstones, argillites, and siltstones. The basal and top sections contain coal seams; the basal sections are of even workable thickness.

Quaternary deposits comprise sandstones, clays, and other unlithified material. They are not subdivided in the Holocene part. Traditionally, chronostratigraphical units have been recognized for the Quaternary because these deposits are very poor in Svalbard. An attempt to recognize lithostratigraphical units was made by Semevskij (1967) for the Holocene. However, subsequently, the order and character of Quaternary events underwent multiple reconsiderations.

TABLE 1
Stratigraphical scheme of Devonian deposits
(Friend 1961; Gee & Moody-Stuart 1966; Murašov & Mokin 1976)

Age	Series	Formation	
Fammenian	Mimerdalen	Plantekløfta	
Frasnian		Planteryggen	
Givetian		Fiskekløfta	
		Estheriahaugen	
	Wijde Bay	Tage Nilsson	
Eifelian	Grey Hoek	Forkdalen	
		Tavleffjellet	
		Gjelsvikfjellet	
Emsian	Wood Bay	Stjørdalen	
Siegenian		Keltiefjellet	
		Kapp Kjeldsen	
Gedinnian - Late Silurian	Red Bay	Ben Nevis	
		Fraenkelryggen	
		Andreebreen	
		Red Bay conglomerate	Princesse Alice
			Rabotdalen
			Wulfberget
	Siktefjellet	Siktefjellet	
		Lilljeborgfjellet	

TABLE 2
Stratigraphical scheme of Carboniferous and Permian deposits

West Spitsbergen Nathorst 1910	Billefjorden		Cutbill & Challinor 1965
	Forbes et al. 1958		
Productus-bearing Limestones	Brachiopod Cherts	Upper Middle Lower -----	Hovtinden Member
			Svenskeegga Member
Spirifer Limestone		Limestone A	Vøringen Member
Cyathophyllum Limestones	Upper Gypsum Series		Gipshuken Formation
	Limestone B		Limestone B
Lower Gypsum Zone	Wordiekammen Limestones	Upper	Tyrrellfjellet Member
		Middle	Brucebyen Beds
		Lower	
		Black Crag	Black Crag
	C a m p b l o u r p y g g e n	Transitional Beds	
		Pyramiden Conglomerate Fm.	Pyramiden Conglomerate Fm.
		Lower Gypsum Series	Carronelva Beds
			Minkinfjellet Member
			Ebbadalen Formation
Culm Sandstones	Billefjorden Sandstones		Billefjorden Group

TABLE 3
Stratigraphical scheme of Carboniferous and Permian deposits
(formations after Cutbill & Challinor 1965)

Age	Bjørnøya	Southern Spitsbergen	Spitsbergen, central and northern Nordaustlandet
Kungurian and Late Permian	Spirifer Limestone	Tokrossøya Fm.	Kapp Starostin Formation
Artinskian	Cora Limestone		
Sakmarian			Treskelodden Fm.
Asselian			Hyrnefjellet Fm.
Orenburgian	Fusulina Limestone		Gipshuken Formation
Gzelian	Yellow Limestone		Reinodden Formation
Moscovian	Ambigua Limestone		Nordenskiöldbreen Formation
	Red Conglomerate		
		Sergeifjellet Formation	Tårnkanten Formation
		Hornsundheset Formation	Petrelskardet Formation
Bashkirian			Brøggerfjenden Formation
Namurian	Nordkapp Formation		Ebbadalen Formation
Visean	Rædvika Formation		Svenbreen Formation
Turnaisian		Adriabukta Formation	Hørbyebreen Formation

TABLE 3a
Stratigraphical scheme of Triassic deposits
(Buchan et al. 1965)

Age			Group	Subgroup	Formation	Member	
JURASSIC					Kapp Toscana	De Geerdalen	
T R I A S S I C	L a t e	Rhaetian					Tschermakfjellet
		Norian					
		Carnian					
S S I C	M i d d l e	Ladinian	S a s s e n d a l e n	K o n g r e s s f. j.	Botneheia		
		Anisian					
	E a r l y	Scythian			Sticky Keep	Kaosfjellet	
						Iskletten	
		Vardebukta			Siksaken		
					Selmaneset		

(Přelina 1980, 1983)

Age		Horizon	Sørkapp Land Hornsund	Spitsbergen west coast	eastern Spitsbergen, Barents-, Edge-, and Wahlbergøya	Hopen	Bjørnøya
Late	Norian	Bjørnbogen	Keilhauffjellet Formation	Twillingodden Formation	Bjørnbogen Formation	Flatsalen Formation	-
	Carnian	Hahnfjella		Isfjorden Formation		Isfjorden Formation	
Middle	Ladinian	Botneheia	Van Keulenfjorden Formation		Hahnfjella Formation	-	Hahnfjella Formation
	Anisian		Hyrnefjellet Formation	Bravalsberget Formation			
Early	Olenikian	Wichebukta	Pitnerodden Formation		Wichebukta Formation	-	Wichebukta Formation
	Induan	Vardebukta	Kistefjellet Member	Vardebukta Formation			Vardebukta Formation

TABLE 5/6
Stratigraphical scheme for Triassic deposits
(Mørk et al. 1982)

[illegible]

Svalbard (without Bjørnøya)	Bjørnøya	Hornsund-Sørkapp High	West coast Spitsbergen	Dickson Land, Sassen- and Agardhdalen, Barentsøya, Edgeøya
S A S S E E N D A L E N G R O U P	V e r d a n B e d	Karentoppen Member	Somovbreenn Member	B A R E N T S Ø Y A F M.
	U R D D F O R M A T I O N	Bravaisberget Formation	Passhattan Member	Botneheia Member
		Kistefjellet Formation	Tvillingodden Formation	Sticky Keep Member
		Brevass-fjellet Bed	Skilisen Bed	
		—	Vardebukta Formation	Deltadalen Member

TABLE 6a
Stratigraphical scheme of Jurassic and Cretaceous deposits
Sabine Land and eastern Nordenskiöld Land
(Parker 1967)

Group	Formation	Member	
A D V E N T D A L E N G R O U P	Carolinenfjellet	Langstakken	
		Innkjegla	
		Dalkjegla	
	Helvetiafjellet	Glitrefjellet	
		Festningen	
	Janusfjellet Subgroup	Rurikfjellet	
		Agardhfjellet	
	Kapp Toscana	De Geerdalen: Brentskardhaugen Bed	

TABLE 7
Stratigraphical scheme of Jurassic and Cretaceous deposits
(Pöelina 1980, 1983)

Age	Horizon	Sørkapp Land Hornsund	Spitsbergen west coast	eastern/southeastern Spitsbergen	NE Spitsbergen, Wilhelmøya	Hopen
C R E T A C E O U S	Albian	Kvalvågen Formation			Kvalvågen Fm.	
	Apcian-Albian	Singerfjellet Formation		Ymerbukta Fm.	Singerfjellet Fm.	
	Aptian	Dalkjegla Formation				
	Barremian					
	Hauterivian	Helvetiafjellet Formation				
		Valangian-Berriasian	Kikutodden Member			
J U R A S S I C	Volgian	Sylodden Fm.	Rurikfjellet Fm.	Sylodden Fm.	Rurikfjellet Fm.	
	Kimmeridgian	Konussen Fm.		Konussen Fm.		
	Oxfordian	Agardhfjellet Formation				
	Callovian					
M I D - E A S T E R N J U R A S S I C	Bathonian-Toarcian	?				
	Pienzbachian-Hettangian	Sørkapp Fm.		Brentskardhaugen Member	Teistherget Formation	
						Lyngfjellet Formation

TABLE 8
Stratigraphical scheme of Paleogene deposits

Age*	Central Spitsbergen Major & Nagy (1972)	Livšic (1967)*	Western coast of Spitsbergen Livšic (1967)*		
Oligocene	Aspelintoppen Formation	Storvola Formation	Marchaislaguna Formation	Ny Alesund Formation	Renardodden Formation
	Battfjellet Formation	Collinderodden Formation	Krokodillen Formation	Kongsfjorden Formation	Skilvika Formation
Eocene	Gilsøryggen Formation	Frysjaodden Formation	Reinhardpynten Formation		
			Seshøgda Formation		
			Selvågen Formation		
Paleocene	Sarkofagen Formation	Hollendardalen Formation			
		Grumant Formation			
	Basilika Formation	Colesbukta Formation			
	Fitkanten Formation	Barentsburg Formation			

A

ADRIABUKTA FORMATION

E. Carboniferous

(Birkenmajer & Turnau 1962, Cutbill & Challinor 1965)

Named from a bay in Hornsund, Spitsbergen.

Hornsund area, Spitsbergen. The unit forms part of the Billefjorden Group. The upper boundary (with Carboniferous) and lower boundary (with Devonian rocks) are tectonic. It consists of black argillites, minor amounts of conglomerates, breccias and quartzitic sandstones. The thickness is 300 m. Miospores occur. The unit was previously regarded as Devonian.

B.P.Gavrilov, D.V.Semevskij

ADRIABUKTA SERIES

E. Carboniferous

(Birkenmajer & Turnau 1962)

Equivalent to Adriabukta Formation.

D.V.Semevskij

ADVENTDALEN GROUP

Jurassic to Cretaceous

(Parker 1967)

Named from a valley in Nordenskiöld Land, Spitsbergen.

Svalbard. The unit rests on the deposits of the Kapp Toscana Group of Late Triassic to Early Jurassic age and is unconformably overlain by the Paleogene deposits of the Van Mijenfjorden Group. It includes the Agardhfjellet, Rurikfjellet, Helvetiafjellet and Carolinefjellet formations on Spitsbergen, Kongsøya and Kong Karls Land. Pčelina (1983) includes into the group the upper part of the Tumlingodden Horizon, the Agardhfjellet Rurikfjellet, Helvetiafjellet and Dalkjegla formations, the Singerfjellet Horizon and the Kvalvågen Formation.

D.V.Semevskij

ADVENTFJORDEN-SCHICHTEN

Paleocene

(Vonderbank 1970)

Named from a fiord, Spitsbergen.

Spitsbergen Trough. The strata represent the first of the four sedimentation cycles performing the Paleogene sequence. Three subunits are included: light sandstones, interbedded argillites and sandstones, and basal conglomerates. The thickness in the western part of the trough is 170 m, in the central part 135 m and in the eastern part up to 80 m. It corresponds to the Barentsburg Formation except for a 15 m thick unit of conglomerate and sandstones in the upper part of the latter which is assigned to the Grumantdalen Schichten. According to the author the strata are not younger than Danian.

D.V.Semevskij

AGARDHFJELLET FORMATION

M. to Lt. Jurassic

(Parker 1967)

Named from a mountain at Agardhbukta, Spitsbergen.

Svalbard. The formation rests unconformably and with a sharp contact on the Early to Middle Jurassic Tumlingodden Horizon which comprises the conglomeratic Brentskardhaugen Bed (Pčelina 1983) in the upper part of the Kapp Toscana Formation (Parker 1967). Conformably, with a sharp lithological contact in Agardhbukta and Sassenfjorden, it is overlain by the Early Cretaceous deposits of the Rurikfjellet Horizon. The unit contains dark, mainly bituminous, argillites (shales) and siltstones with various biogenic carbonate nodules. Ammonites, bivalvia, ichthyofauna, reptile remains, vermiform burrows, foraminifers and radiolaria are observed. Fossil zones and strata according to Eršova (Pčelina 1983): Callovian: *Arcticoceras kochi*, *Kepplerites tychonis* zones, *Cadoceras* sp. beds, *Longaeviceras keyserlingi* and *Quenstedtoceras lamberti* zones; Oxfordian: *Vertusniceras* and *Quenstedtoceras* sp. beds, *Cordioceras cordatum*, *Amoeboceras alternans*, *Amoeboceras freboldi* zones. Kimmeridgian: *Rasenia borealis*, *Amoeboceras kitcheni*, *Amoeboceras decipiens* beds; Volgian: *Subplanites* sp., *Pectinatites* sp. beds, *Dorsoplanites panderi*, *Dorsoplanites maximum*, *Langeites groenlandicus*, *Craspedites okensis*, *Craspedites nodiger* zones, *Virgatosphinktes* sp. beds. The thickness in the type section (Agardhfjellet) is 241.5 m. The overall thickness is 195 to 380 m. Parker (1967) included the formation into the Janusfjellet Subgroup; Birkenmajer (1974) incorporated it as a member into the Janusfjellet Formation; according

to Pčelina (1983) in western Spitsbergen the Formation includes the Tufsodden Member. The Ingebrigtsenbukta Series as defined by Różycki (1959) corresponds to most of the formation, except for the uppermost section.

E.S.Eršova, T.M.Pčelina

AGARDHFJELLET MEMBER

M. to Lt. Jurassic

(Birkenmajer 1975)

Named from a mountain at Agardhbukta, Spitsbergen.

The unit was defined for a part of Spitsbergen. It is equivalent nearly to the entire member in southern Spitsbergen, except for the upper part of the section, the Ingebrigtsenbukta Member (Birkenmajer 1975). The member is incorporated into the Janusfjellet Formation. The bulk of the member in general corresponds to that of the Agardhfjellet Formation (Parker 1967). However, the author recognized at its base a basal bed, maximum 0.5 m thick. The Agardhfjellet Member is separated by an Lt. Volgian-Berriasian hiatus from the overlying deposits.

D.V.Semevskij

ALFREDFJELLET FORMATION

E. Permian

(Krasil'ščikov & Livšic 1974)

Named from a mountain on southern Bjørnøya.

Bjørnøya. The unit rests on the eroded Ordovician, Late Devonian, Early and Middle Carboniferous deposits with a distinct angular unconformity and is overlain by eroded Late Permian deposits of the Miseryfjellet Formation. It contains silty limestones, limestones, conglomerates and sandstones. The thickness is up to 45 m. Brachiopods and pelecypods are observed.

B.P.Gavrilov

AMBIGUA LIMESTONE, AMBIGUAKALKEN

M. Carboniferous

(Anderson 1900)

Bjørnøya. The unit correlates with the Kobbekbukta Formation.

D.V.Semevskij

ANASIBIRITES HORIZON (SUBZONE)

E. Triassic

(Spath 1921)

The unit corresponds to the "Lowest Nodule Beds" (Gregory 1921) (Sticky Keep Member of the Barentsøya Formation, Mørk et al. 1982)

D.V.Semevskij

ANDREEBREEN FORMATION

E. Devonian

(Friend 1961)

Named from the glacier "Andreebreen" in Haakon VII Land, Spitsbergen.

Liefdefjorden area, Spitsbergen. It overlies the Devonian Princesse Alice Formation with an erosive unconformity and is conformably overlain by the Devonian rocks of the Fraenkelyggen Formation. The unit is composed of coarse- and large-grained sandstones and gritstones with numerous siltstones and argillaceous interbeds and lenses. The thickness attains 200 m. It forms part of the Red Bay Series.

L.G.Murašov

ANDREE LAND GROUP

M. to Lt. Devonian

(Harland et al. 1974)

Named from Andree Land, Spitsbergen.

Northern Spitsbergen. The unit is composed of lagoonal to continental deposits. The thickness is 4500 m. It is subdivided into the Wood Bay, Grey Hoek, Wijde Bay and Mimervalley Formations. More frequently used is the subdivision into Wood Bay, Grey Hoek, Mimerdalen and Wijde Bay Formations by Murašov & Mokin (1976).

D.V.Semevskij

ANHYDRITE MEMBER

Permian

(Bates & Schwarzacher 1958)

Area between Ekman- and Dicksonfjorden, Spitsbergen. The unit forms part of the Evaporite Series. In the scheme of Cutbill and Challinor (1965) it corresponds to the lower part of the Lower Gypsum Zone of the Gipshuken Formation. The thickness is not indicated.

D.V.Semevskij

ANSERVIKA BEDS

M. Carboniferous

(Cutbill & Challinor 1965)

Named from a bay on Bünsow Land, Spitsbergen.

Billefjorden area, Spitsbergen. The unit rests conformably on the Pyramiden strata and it is conformably overlain by the Jotunfonna Beds, forming part of the Minkinfjellet Member of the Nordenskiöldbreen Formation. It contains dolomites. The thickness attains 125 m.

B.P.Gavrilov

ARCTOCERAS HORIZON*

E. Triassic

(Frebold 1930)

Named from a distinctive fauna.

Central Spitsbergen. This is the upper part of the "Fish Niveau" with abundant *Arctoceras polaris* (Mojs.) (= *Arctoceras blomstrandii* Lindst.) and *Posidonomya mimer* Oeberg. The author dated it as Late Triassic due to the contained *Euflemingites romunderi* Zone of Late Olenekian age, according to recent schemes. Buchan et al. (1965), Mørk (1982) assigned it to the Sticky Keep Formation (Member) from the Barentsøya Formation. According to Pčelina (1983) it is assigned to the Wichebukta Formation.

M.V.Korčinskaja

* Revision by T.M.Pčelina. The original version in the book reads: Central Spitsbergen. This is the upper part of the Fish Niveau with abundant *Arctoceras polaris* (Mojs.) (= *Arctoceras blomstrandii* Lindst.) and *Posidonomya mimer* Oeberg. It was originally assigned to Early Triassic age. It belongs to the *Euflemingites* Subzone of the *Arctoceras blomstrandii* Zone (the lower substage of the Olenekian) (Korčinskaja 1982), or to the Iskletten Member of the Sticky Keep Formation (Buchan et al. 1965). Mørk et al. (1982) assigned it to the Sticky Keep Member of the Barentsøya Formation, while Pčelina (1983) considered it to be the lower part of the Wichebukta Horizon.

ARCTOCERAS LAYERS (SCHICHTEN)

E. Triassic

(Stolley 1911)

Named from a distinctive fauna.

Central Spitsbergen. The layers occur in the Kapp Thordsen area, Dickson Land, Spitsbergen. The unit was compared with posidonomyan beds (limestones containing *Posidonomya*, Mojsisovičs 1886). The characteristic fauna is *Arctoceras polaris* (Mojs) (= *A. blomstrandii* Lindst., *Posidonomya mimer* Oeberg. According to Korčinskaja (1982) it is assigned to the *Arctoceras blomstrandii* Zone, according to Buchan et al. (1965) to the lower part of the Sticky Keep Formation, according to Mørk et al. (1982) to the Sticky Keep Member of the Barentsøya Formation, and according to Pčelina (1983) to the lower part of the Wichebukta Formation.

M.V.Korčinskaja

ARGILLITE UNIT

Lt. Triassic

(Klubov 1965)

Edgeøya and Barentsøya. The unit rests on Middle Triassic deposits and is overlain by the "Transitional Beds". The thickness attains 70 m. It corresponds to the lower part of the Edgeøya Formation and its equivalents (Lock et al. 1978).

D.V.Semevskij

ARNESENODDEN BED

Lt. Triassic to E. Jurassic

(Smith et al. 1976)

Named from a point on Svenskøya, Kong Karls Land.

Svenskøya. The unit consists of argillites. Based on palynology it is assigned to the Rhaetian to Liasic. It is part of the Svenskøya Formation occurring at the base of the outcropping section. The thickness is 5 m. According to Pčelina (1980) it corresponds to the upper part of the Bjørnbogen Formation and according to Mørk et al. (1982) to the lower part of the Wilhelmøya Formation.

E.S.Eršova, M.V.Korčinskaja

ASPELINTOPPEN FORMATION

Oligocene

(Major & Nagy 1972)

Named from a mountain at the southern coast of Van Mijenfjorden, Spitsbergen.

Nordenskiöld Land and Nathorst Land, Spitsbergen. The minimum thickness is 600 m. It is equivalent to the Storvola Formation. The unit was dated by the author as Eocene.

D.V.Semevskij

AUCELLA SHALE, AUCELLASCHICHTEN

Jurassic

(Nathorst 1910)

Named from a characteristic fauna.

Southern Spitsbergen, Eastern Svalbard. The unit rests upon the Brentskardhaugen Bed ("Lias conglomerates") and is overlain by the Festingen Sandstone. It is composed of dark shales with concretions and ferruginous limestones in argillite interbeds. The thickness is 400 to 600 m. Nathorst subdivided the unit into three members: black shales in the upper and lower part of the section separated by dark grey shales. Bivalves, ammonites and belemnites are observed. The unit corresponds to the Janusfjellet Formation (according to Parker 1967) and to the Agardhfjellet Formation and the Rurikfjellet Horizon according to Pčelina (1983).

E.S.Eršova, D.V.Semevskij

AUSTFJORDEN SANDSTONE MEMBER

E. Devonian

(Friend et al. 1966)

Equivalent to the Austfjorden Sandstone Formation.

D.V.Semevskij

AUSTFJORDEN SANDSTONE FORMATION

E. Devonian

(Vogt 1929)

Named from a fiord, Spitsbergen.

Dickson Land, Spitsbergen. The unit is composed of grey sandstones interbedded with multicoloured siltstones. Their thickness is 900 m. The formation contains ichthyofauna and sparse flora. It forms part of the Wood Bay Series, being coeval with the Kapp Kjeldsen Formation. Friend et al. (1966) defined a synonymous member.

L.G.Murašov

AUSTJØKELEN FORMATION

Lt. Triassic

(Mørk et al. 1982)

Named from a glacier in Sørkapp Land, Spitsbergen.

Southern Spitsbergen. The unit forms part of the Kapp Toscana Group. It conformably overlies the Bravaisberget Formation and is conformably overlain by the De Geerdalen Formation deposits. It consists of shales, up-section increasingly interbedded with siltstones. The thickness is up to 31 m, in the type section 18 m. It is a lateral, coeval equivalent of the Tschermakfjellet Formation.

D.V.Semevskij

B

BARENTSBURG FORMATION

Paleocene

(Livšic 1967)

Named from the Barentsburg Mine, Spitsbergen.

Marginal Spitsbergen Trough. It rests with an erosive unconformity on the Albian deposits and is conformably overlain by the Paleocene Colesbukta Formation. It consists predominantly of fine-grained sandstones and arenaceous siltstones. Basal conglomerates are 0.2 to 3.6 m thick. Up to six coal seams of 0.2 to 2.8 m thickness occur also in the lower part of the formation. The thickness varies between 80 and 130 m on Sørkapp Land and Torell Land, and is 160-230 m in central Nordenskiöld Land. The unit contains abundant plant remains, pelecypods and insects. It has first been recognized as the "Lower Light Sandstone Series" (Nathorst 1910), and has later been renamed to "Coal-bearing Sandstone Formation" (Kotlukov 1936), "Lower Coal-bearing Sandstone Formation" (Ljutkevič 1937), "Lower Light Sandstone Formation" (Orvin 1940), and

Firkanten Formation (Major & Nagy 1972).
D.V.Semevskij

BARENTSØYA FORMATION
(Lock et al. 1978, Mørk et al. 1982)
Named from an island.

E. to M. Triassic

The unit was defined on Barentsøya and subsequently extended to central and eastern Spitsbergen. It forms part of the Sassendalen Series (Group) and embraces the Vardebukta Formation (Buchan et al. 1965) and the Deltadalen (Mørk et al. 1982), Sticky Keep and Botneheia Members (Flood 1971). The unit lies on the Permian deposits and overlain by Late Triassic deposits with an erosive, conformable contact. It contains shales, interbedded with siltstones and sandstones in the lower part of the succession. The upper part of the succession shows abundant phosphorite nodules and interbeds. Ammonites, bivalves and reptile bones occur. The thickness of the composite type section is 300 m, of the parastratotype 420 m.

M.V.Korčinskaja

BASAL BED
(Smith 1975)

Lt. Triassic

Bed within the Wilhelmøya Member. It has a member rank within the Wilhelmøya Formation.
D.V.Semevskij

BASAL MEMBER
(Worsley 1973)

Lt. Triassic (E. Jurassic?)*

Lowest of the four members included in the Wilhelmøya Formation, containing sandstones with pebbles in the lower part of the section. The thickness is 7 m.

D.V.Semevskij

* T.M.Pčelina

BASILIKA FORMATION
(Major & Nagy 1972)

Paleocene

Named from a mountain on the southern coast of Van Keulenfjorden, Spitsbergen.

It was defined in the eastern parts of Nordenskiöld Land and Nathorst Land. The thickness is 330 m. It correlates with the Colesbukta Formation.

D.V.Semevskij

BATTFJELLET FORMATION
(Major & Nagy 1972)

Eocene

Named from a mountain in central Nordenskiöld Land, Spitsbergen.

Nordenskiöld Land and Nathorst Land. The thickness is up to 200 m. The unit is equivalent to the Collinderodden Formation.

D.V.Semevskij

BELLSUND BEDS
(Semevskij 1967)

Pleistocene

Named from a fiord gulf, Spitsbergen.

It was defined across Svalbard, resting upon the Pleistocene Calypsobyen strata and overlain by the Pleistocene Kapp Lyell Beds. It consists of glacial boulders and pebbles. Their thickness is 9 m in the type section. Microfauna is observed.

D.V.Semevskij

BEN NEVIS FORMATION
(Kiaer 1918)

E. Devonian

Named from a mountain in Haakon VII Land, Spitsbergen.

Liefdefjorden area, Spitsbergen. The unit conformably rests on the Devonian Fraenkelryggen Formation and is conformably overlain by the Kapp Kjeldsen Formation. It is composed of multicoloured sandstones and siltstones. The thickness exceeds 900 m. The unit contains ichthyofauna, pelecypods and ostracods. As part of

the formation Vogt (1926) distinguished five biostratigraphical horizons; Murašov & Karajute-Talimaa (1980) defined an additional one within Vogt's lower horizon, comprising the lowermost part of the formation. The Ben Nevis Formation is incorporated into the Red Bay Series.

L.G.Murašov

BILLEFJORDEN BEDS

Pleistocene

(Semevskij 1967)

Named from a fiord.

The unit is defined across Svalbard. It has been reported from central Spitsbergen, resting upon pre-Quaternary deposits and overlain by the Pleistocene Calypsobyen ~~strata~~ ^{strata}. It is composed of bouldery loams with a thickness of 9 m in the type section. The unit contains reworked shell and mollusc fragments.

D.V.Semevskij

BILLEFJORDEN SANDSTONES

E. Carboniferous

(Forbes et al. 1958)

Named from a fiord of Spitsbergen.

Spitsbergen. The name has been suggested to replace "culm sandstones". The unit correlates with the the Billenfjorden Series (Group).

D.V.Semevskij

BILLEFJORDEN SERIES (GROUP)

E. Carboniferous

(Cutbill & Challinor 1965)

Named from a fjord of Spitsbergen.

Svalbard and Bjørnøya. The unit unconformably rests on the Devonian deposits and is unconformably overlain by the Middle Carboniferous Gipsdalen Series (Group). The deposits of the series commonly lie in small narrow grabens (graben-shaped basins). A terrestrial sequence of fluvial sandstones is grading into coal-bearing deposits. The unit is mainly composed of sandstones, quartzites and argillites with minor conglomerate units. The depositional thickness varies from 300-400 m in central Spitsbergen to 1000 m near Hornsund. In the central Spitsbergen it is subdivided into Horbyhebeen and Svenbreen Formations, the former (lower) missing from the west coast of the island, the latter is corresponding to the Orustdalen and Vegard Formations; near Hornsund and Sørkapp Land the lower formation mainly corresponds to the Adriabukta Formation, while the upper formation corresponds to the Hornsundset and Sergeijevfjellet formations. On Bjørnøya, where the correlative interval reaches a thickness of 300 m, the series corresponds to the upper part of Røedvika Formation and the Nordkapp Formation.

D.V.Semevskij

BJØRNBOGEN BED

Lt. Triassic

(Smith 1975)

Named from a bay on Wilhelmøya.

The unit forms part of the Wilhelmøya Member. It correlates with the Bjørnbogen Member of the Bjørnbogen Formation (Mørk et al. 1982).

D.V.Semevskij

BJØRNBOGEN FORMATION

Lt. Triassic

(Pčelina 1980)

Named from a bay on Wilhelmøya.

Eastern and central Svalbard. The unit forms part of the Bjørnbogen Horizon, coeval with the Tvillingødden, Keilhaufjellet and Flatsalen Formations. The unit lies conformably on the Late Triassic Isfjorden Formation and is overlain by the Jurassic Tumlingødden Horizon with an erosive boundary. It consists of two members. The lower one is build up of sandstones with conglomerates and gravelites at the base. The upper one is composed of argillites and clayey siltstones containing ankerite/siderite nodules. The thickness is 10 to 59 m. Ammonoids, foraminifers and pelecypods occur. The unit includes the three lower members of the Wilhelmøya Formation (according to Worsley 1978). According to Mørk et al. (1982) it correlates with the Wilhelmøya Formation except for the Brentskardhaugen Member.

T.M.Pčelina

BJØRNBOGEN HORIZON

Lt. Triassic

(Pčelina 1980)

Named from a bay on Wilhelmøya.

Svalbard. It comprises the Bjørnbogen (eastern Spitsbergen), Tvillingodden (western Spitsbergen), Keilhaufjellet (Sørkapp Land, Hornsund, Spitsbergen), Flatsalen (Hopen) Formations and the Koburg Member (Kong Karls Land).

T.M.Pčelina

BJØRNBOGEN MEMBER

Lt. Triassic

(Worsley 1973)

Named from a bay on Wilhelmøya.

This is the second of the four members of the Wilhelmøya Formation. The unit is composed of argillites with septarian nodules. It contains bivalves and plesiosaurian bones. The thickness is 33 m.

D.V.Semevskij

BLACK CRAG BEDS

Lt. Carboniferous

(Cutbill & Challinor 1965)

The name is due to the hardness of the escarpment-forming beds.

Billefjorden area, Spitsbergen. The unit was first recognized by Gee et al. (1953) as Black Crag Member lying at the base of the Wordiekamen Limestone Formation. It is part of the Cadellfjellet Member of the Nordenskiöldbreen Formation. The unit rests with a sharp boundary on the Middle Carboniferous Minkinfjellet Member. The upper boundary is defined by the change of the foraminifer fauna. Upwards, at the base of the overlying breccia, porcelaneous limestones occur. The thickness is up to 30 m. According to its microfossil content it is grouped with the Late Carboniferous *Triticites* Zone.

B.P.Gavrilov, D.V.Semevskij

BLACK SHALES AND YELLOW FLAGS

E. Triassic

(Gregory 1921)

The unit forms a member of black, often calcitized shales and overlies laminated weathered siltstone, buff in colour. It was observed by the author in Triassic deposits on the southwest side of the Sassendalen, Spitsbergen. Its thickness is not known. The unit rests on the Lowest Nodule Beds and is overlain by the Escarpment Shales. Abundant *Posidonomya*, fish and reptile remains are observed. Spath subdivided the unit into the Saurian Bed and the Upper and Lower *Posidonomya* Shales. In Buchan's et al. scheme (1965) they are part of the Sticky Keep Formation, while in Mørk's et al. (1982) scheme they are included into the Sticky Keep Member of the Barentsøya Formation. According to Pčelina (1983), they belong to the Wichebukta Formation.

M.V.Korčinskaja

BLANKNUTEN BED

M. Triassic

(Mørk et al. 1982)

Named from a high on Edgeøya.

Eastern Svalbard. The unit forms part of the Botneheia Member of the Barentsøya Formation (according to Mørk et al. 1982) and consists of calcitized carbonate shales with phosphatic nodules with common thin interbeds of limestones. It is coeval with the Botneheia Member (according to Flood 1971), (Oil Shale Member; Lock et al. 1978)* and the Somovbreen of the Bravaisberget Formation (according to Mørk 1982). The thickness is 21 m.

D.V.Semevskij

* added by T.M.Pčelina

BOGEVIKA MEMBER

M. Carboniferous

(Kirkemo 1979)

Named from a bay at the west coast of Bjørnøya.

Bjørnøya. The unit is included in the Kapp Kåre Formation as its lower member (Worsley & Edwards 1976). It consists of interbedded sandstones, shales and limestones, forming separate units. The thickness is 95 m. It corresponds to the lower member of the Kobbbukta Formation.

D.V.Semevskij

BOTNEHEIA FORMATION

M. Triassic

(Buchan et al. 1965, Pčelina 1983)

Named from a hill to the south of Sassenfjorden, Spitsbergen.

The unit was previously identified within the Anisian and lower Ladinian stages across Svalbard, with the exception of Sørkapp Land and far northeastern Spitsbergen. According to Pčelina (1983), it is correlated with the entire Middle Triassic and occurs only on eastern Spitsbergen. The unit conformably overlies the Olenekian Wichebukta Formation and is conformably overlain by the Carnian Hahnfjella Formation. The unit shows a stable phosphoritic succession of dark bituminous, fine-silty argillites. Clayey argillites become prominent westward. The unit is composed of two members of Anisian and Ladinian age, respectively. According to Korčinskaja (1982) the first one comprises *Lenotropites caurus* Zone with the *Anagymnotoceras*, *Hollandites*, *Gymnotoceras*, *Frechites laqueatum* zones. The *Tsvetkovites varians*, *Indigirites tozeri* and *Nathorstites mcconnelli* zones (Korčinskaja 1982) are identified in the second member. Ammonoids, bivalves, radiolarians, algae, ichthyofauna and reptiles occur. The thickness is 62 to 149 m (Pčelina 1983).

T.M.Pčelina, M.V.Korčinskaja

BOTNEHEIA HORIZON

M. Triassic

(Pčelina 1983)

Named from a hill south of Sassenfjorden, Spitsbergen.

The unit comprises the laterally equivalent Botneheia (eastern Spitsbergen), Bravaisberget (western Spitsbergen), Hymefjellet (southern Spitsbergen) and Van Keulenfjorden (western Spitsbergen) Formations.

T.M.Pčelina

BOTNEHEIA MEMBER

M. Triassic

(Mørk et al. 1982)

Named from a hill to the south of Sassenfjorden, Spitsbergen.

The unit forms part of the Barentsøya Formation of the Sassendalen Group. According to Buchan et al. (1965) it corresponds to the Botneheia Formation.

D.V.Semevskij

BRACHIOPOD CHERTS (GROUP)

Permian

(Gee et al. 1952, Forbes et al. 1958)

Named from a characteristic fauna.

Central Spitsbergen. The unit was subdivided (upsection) into the Limestone A unit, the Lower, Middle and Upper members (Forbes et al. 1958) or, previously, into "Spirifer Limestones" and "Productus Limestones" (Narhorst 1910). The unit rests on "Cyathophyllum Limestones" and is overlain by Triassic rocks. It consists of cherts and cherty limestones. The thickness is up to 440 m. The unit is equivalent to the Kapp Starostin Formation.

B.P.Gavrilov, D.V.Semevskij

BRACHIOPOD FORMATION

Permian

(Nordenskiöld 1863)

Named from a characteristic fauna.

Hinlopen area, Spitsbergen. The unit is composed of dense, cherty limestones with abundant brachiopod fauna. The thickness exceeds 450 m. It correlates with the Kapp Starostin Formation.

D.V.Semevskij

BRAVAISBERGET FORMATION

M. Triassic

(Mørk et al. 1982; Pčelina 1983)

Named from a mountain at the coast of Van Keulenfjorden, Spitsbergen.

Western Spitsbergen. According to Pčelina (1983) the unit correlates with the lower member and lower part of the upper member of the Botneheia Formation (Anisian to Early Ladinian). It rests conformably upon the Olenekian Wichebukta Horizon and is conformably overlain by the Late Ladinian Van Keulenfjorden Formation. The unit is composed of argillites, siltstones interbedded with thin sandstones, nodular and oolite phosphorites. Ammonoids, bivalves, brachiopods and algae are observed. The thickness is 125 to 196 m. In most of the area the Early Anisian *Lenotropites caurus* Zone and Middle Anisian beds with *Anagymnotoceras*, *Gymnotoceras*

and *Hollandites* are identified. The unit has previously been recognized by Mørk et al. (1982) who regarded it to be equivalent to the Bomeheia Formation of Buchan et al. (1965). In the type section its thickness is 212 m. It is common in the west coast area of Spitsbergen, including the Hornsund area, and is composed of phosphorite shales, up-section grading into coarse-grained sandstones. There are two members within this unit at the west coast, the Passhatten and Somovbreen members. In the Hornsund-Sørkapp area the Karentoppen Member occurs in the middle part of the succession. On Bjørmøya it correlates with Verdande Bed of the Urd Formation.

T.M.Pčelina

BRENTSKARDHAUGEN BED

Jurassic

(Parker 1967)

See Brentskardhaugen Member.

D.V.Semevskij

BRENTSKARDHAUGEN MEMBER

E. to M. Jurassic

(Pčelina 1980)

Named from a mountain in Adventdalen, Spitsbergen.

Spitsbergen. The unit occurs in central and western parts of Spitsbergen, near Agardbukta and Wichebukta, and in Hornsund. In the west and east it rests with an erosive stratigraphical unconformity on Norian and Hettangian-Plinsbachian deposits, respectively. Is overlain by the Callovian deposits of the Agardhfjellet Formation with a sharp contact. The unit is a good marker. It is composed of conglomerates, carbonate sandstones with fine pebbles and gravels, phosphate concretions, and the upper part of the member (0.1 to 3 m) is built up with ankerite-siderite rocks which are missing in the northeastern areas. Sandy-phosphatic nodules are persistent and form a thin layer at the base of the member in most of the eastern areas. The thickness of the member is 0.7 to 4.7 m. Despite of the poor thickness the member shows a distinct stratification with 3-7 beds correlating with certain sedimentation periods during the Toarcian-Bathonian. In nodules and sandy cement there are abundant ammonids (except for the Festningen and Selmaneset sections where nodules are barren of fossils), bivalves, molluscs, belemnites and, in the upper part of the succession, stromatolites. The member was first defined as a conglomerate bed at the base of Jurassic rocks (Jurassic basal conglomerate, according to Frebold (19289; Liassic conglomerate, according to Orvin 1940). These authors assigned the bed to the underlying Kapp Toscana Formation, though its Jurassic age was indicated, because there was no sharp lithological boundary at the base of the bed in some sections (Parker 1965). On the contrary, Birkenmajer (1964) assigned the Brentskardhaugen bed to the base of the Janusfjellet Formation accepting it as Callovian and considering its fossil remains as reworked. The name "Brentskardhaugen bed" was suggested by Parker (1967).

E.S.Eršova, T.M.Pčelina

BREVASSFJELLET BED

E. Triassic

(Worsley & Mørk 1978)

Named from a mountain in Sørkapp Land, Spitsbergen.

Southern Spitsbergen. The unit forms the basal part of the Kistefjellet Formation resting with a stratigraphical and angular unconformity on the underlying basement rocks (Hecla Hoek Complex). It is composed of polymict conglomerates containing both Late Riphean shales and Permian limestones. The thickness is up to 2 m. *Promyalina* sp. occurs. It was first defined by Birkenmajer (1977) as "Brevassfjellet Myalina Beds".

D.V.Semevskij

BREVASSFJELLET MYALINA BED(S)

E. Triassic

(Birkenmajer 1977)

Named from a mountain in Sørkapp Land, Spitsbergen.

Southern Spitsbergen. The beds is part of the Urnetoppen Member of the Vardebukta Formation. The unit is composed of siderite-pyritic limestones, argillites and sandstones with common rippled sandstones and sometimes thin ferriferous conglomerates in the upper part of the bed. The overall thickness is up to 2 m. The deposits may form several beds within a member. The age is Late Induan (Early Dinerian).

D.V.Semevskij

BRUCEBYEN BEDS

E. Permian

(Cutbill & Challinor 1965)

Named from a former settlement in Bünsow Land, Spitsbergen.

Central Spitsbergen, extending from Nordenskiöld Land to the Ny Friesland peninsula. The unit lies within the lower part of the Tyrrellfjellet Member, sometimes on an up to 10 m thick conglomerate unit, but commonly immediately on the Cadellfjellet Member. The Brucebyen beds consist of dark grey, bituminous fusulinid limestones. The thickness is 10 to 12 m. Nathorst (1910) identified the beds as "Fusulina Limestones", while Forbes et al. (1958) called them "Middle Wordiekammen Limestones".

B.G.Gavrilov

BRØGGERTINDEN FORMATION

M. Carboniferous

(Orvin 1934, Cutbill & Challinor 1965)

Named from a mountain on Brøggerhalvøya, Spitsbergen.

Brøggerhalvøya. The unit rests unconformably on Pre-Devonian deposits and is conformably overlain by the Middle Carboniferous Scheteligfjellet Member of the Nordenskiöldbreen Formation. It is part of the Gipsdalen Group and is equivalent to the Ebbadalen Formation in age and facies. It consists of conglomerates, red sandstones, and limestones. Its thickness is up to 360 m. Foraminifera and brachyopods are observed.

B.P.Gavrilov

C

CADELLFJELLET MEMBER

Lt. Carboniferous

(Cutbill & Challinor 1965)

Named from a mountain in Bünsow Land, Spitsbergen.

Central Spitsbergen, including Ny Friesland. The unit forms part of the Nordenskiöldbreen Formation and comprises the Gerritbreen and Matthewbreen beds. It conformably rests on the Middle Carboniferous Minkinfjellet Member and is conformably overlain by Early Permian deposits, i.e. Brucebyen Beds of the Tyrrellfjellet Member. At the base dense shelly limestones (Black Crag) occur, while upward in the section there are detrital or porcelaneous limestones and calcareous sandstone interbeds. The *Waeringella usvae* and *Rugosofusulina arctica* fusulinid zones are represented (Sosipatrova 1967). The thickness is up to 250 m. Forbes et al. (1958) identified the deposits of the member as "Lower Wordiekammen Limestones".

D.V.Semevskij

CALYPSOBYEN BEDS

Pleistocene

(Semevskij 1967)

Named from a place on the shore of Bellsund, Spitsbergen.

Svalbard, reported from central Spitsbergen. The unit rests on the Pleistocene Billefjorden Beds and is overlain by the Pleistocene Bellsund Beds. It predominantly consists of sandy/clayey deposits, with pebbles in the upper part. The thickness attains 11 m in the type section. Marine molluscs and ichthyofauna occur.

D.V.Semevskij

CAMPBELLRYGGEN GROUP

M. Carboniferous

(Gee et al. 1952, Forbes et al. 1958)

Named from a mountain range in Bünsow Land, Spitsbergen.

Central Spitsbergen. The unit is located between the "Billefjorden Sandstones" and the "Wordiekammen Limestones". It consists of gypsum, anhydrites, sandstones, various limestones and conglomerates and is subdivided into Lower Gypsiferous Series, Pyramidene Conglomerates and Transitional Beds. The thickness is up to 500 m. It correlates with the Ebbadalen Formation and Minkinfjellet Member of the Nordenskiöldbreen Formation.

B.P.Gavrilov

CAROLINEFJELLET FORMATION

E. Cretaceous

(Parker 1967)

Named from a mountain on the south coast of Sassenfjorden, Spitsbergen.

The unit rests conformably on the Helvetiafjellet Formation and is erosively and unconformably overlain

by Paleogen deposits of the Barentsburg Formation. It consists of clay-siltstone and siltstone deposits with lenses and interbeds of laminated carbonate siltstones, sporadic argillaceous and numerous sandstone interbeds, abundant sandy siltstones forming large units in the upper and lower parts of the succession. Carbonate nodules, bivalves, ammonites and worm burrows are observed. Its thickness is 270 m in the type section, while the overall thickness attains 750 m. Parker (1967) determined the age of the formation as Aptian to Early Middle Albian. According to Nagy (1970) and Pčelina (1983) it is Middle Albian. It correlates with the Upper and Lower Lamina Sandstones and the intermediate Cretaceous Shale Member (Hagerman 1925), or the Ditrupa Shale Series (Różycki 1959). Parker recognized three members within the formation (in ascending order): Dalkjegla, Innkjegla and Langstakken members, without identifying the upper part of the succession as a formal unit. Nagy (1970) subdivided the upper part of the succession into the Zillerberget and Schönrokkfjellet members. Pčelina (1983) subdivided the same stratigraphical interval into (in ascending order) Dalkjegla Formation, Singerfjellet Horizon (Singerfjellet and Ymmerbukta Formation) and Kvalvågen Formation.

E.S.Eršova, T.M.Pčelina

CARRONELVA BEDS

M. Carboniferous

(Cutbill & Challinor 1965)

Named from a river in northern Bünsow Land, Spitsbergen.

Bünsow Land and partly Dickson Land, Spitsbergen. The unit forms part of the Minkinfjellet Member resting at its base within the Nordenskiöldbreen Formation. It separates massive gypsum of the Ebbadalen Formation from gypsum of the Minkinfjellet Member. It consists of thinly bedded sandstones, gypsum, limestones and dolomites. The lower boundary is often complicated by a solution breccia. The thickness is up to 50 m.

B.P.Gavrilov

CHARLESBREEN GROUP

M. Carboniferous

(Dineley 1958)

Named from a glacier near St. Jonsfjorden, Spitsbergen.

West coast of Spitsbergen. It comprises the Petrelskardet and Tårnkanten formations of Cutbill & Challinor's (1965) scheme. The term is not used.

D.V.Semevskij

CLARAIA ZONE (CLARAIEN- UND AMMONITEN-NIVEAU)

E. Triassic

(Frebold 1936)

Named from a characteristic fauna.

Central west coast of Spitsbergen. The unit consists of sandy/clayey shales and calcareous sandstones. It overlies Late Permian deposits and is overlain by the Myalina Shale. Bivalves and ammonites occur. According to the author the age is Eotriassic. Previously it was assigned to the Permian. The thickness is 150 m. According to the recent scheme it is the *Otoceras boreale* Zone* of the Vardebukta Formation (Buchan et al. 1965, Mørk et al. 1982; Pčelina 1983; Korčinskaja 1985)

D.V.Semevskij

* added to this translation by the authors

COAL-BEARING SANDSTONE FORMATION

Paleocene

(Kotlukov 1936)

The unit was defined in the Barentsburg area, Spitsbergen. The thickness is 190 to 210 m. It correlates with the Barentsburg Formation.

D.V.Semevskij

COLESBUKTA FORMATION

Paleocene

(Livšic 1976)

Named from a bay at the south coast of Isfjorden, Spitsbergen.

Predominantly marginal Spitsbergen Trough. It conformably overlies the Paleocene deposits of the Barentsburg Formation with a gradational boundary and is conformably overlain by the Eocene Grumant Formation. It consists particularly of silty argillites and siltstones. To the west and south of the trough, thin interbeds of highly weathered ferruginous argillites occur. The composition of the formation may change

abruptly along strike. Thicknesses are 200 to 320 m in western Nordenskiöld Land, 220 to 350 m in Torell Land and Sørkapp Land, and maximum 15 to 50 m in eastern Nordenskiöld Land. Abundant pelecypods occur. The formation has first been recognized as the "Lower Black Shale Series" (Nathorst 1910), then designated the "Dark Grey To Black Shale Formation" (Kotlukov 1936), the "Lower Black Shale Formation" (Ljutkevič 1937), the "Lower Argillite Formation" (Livšic 1965) and the Basilika Formation (Major & Nagy 1972).

D.V.Semevskij

COLLINDERODDEN FORMATION

Eocene

(Livšic 1967)

Named from a point at the south coast of Van Mijenfjorden, Spitsbergen.

Spitsbergen Trough. It rests conformably on rocks of the Frysjaodden Formation and is conformably overlain by the Paleogene Storvola Formation. It consists of argillites and siltstones, interbedded with polymict sandstones. Two subformations, a lower one dominated by argillites and siltstones (50 to 390 m), and an upper one which distinctly is dominated by sandstones (40 to 110 m). The thickness ranges from 135 to 500 m and increases from east to west and from north to south. Plant remains and pelecypods occur. It has previously been recognized as the "Fissile Sandstone Formation" (Nathorst 1910), the "Upper Fissile Sandstone Formation" (Ljutkevič 1937), and the "Flaggy Sandstone Formation" (Orvin 1940). Major and Nagy (1972) gave the name "Battfjellet Formation" to the same stratigraphical interval.

D.V.Semevskij

CONTINENTAL SERIES

E. Cretaceous

(Różycki 1959)

Southern Spitsbergen. It rests transgressively on the Ullaberget Series and is conformably overlain by the Ditrupa Shale Series. It consists of light, quartzose sandstones interbedded with quartzose conglomerates, black arenaceous shales and thin intercalations of coals. Plant remains occur. The thickness is 50 to 60 m. It comprises the Festingen Sandstone and Coastal Sandstone Member (Hagerman 1925) and correlates with the Helvetiafjellet Formation (Parker 1967).

E.S.Eršova

CORA LIMESTONES

Permian

(Anderson 1900)

Bjørnøya. The unit correlates with the Hambergfjellet Formation (Alfredfjellet).

D.V.Semevskij

CRETACEOUS SHALE(S) (FORMATION)

E. Cretaceous

(Hagerman 1925)

Southern Spitsbergen. It overlies the "Lower Lamina Sandstones" and is overlain by the "Upper Lamina Sandstones". Dark grey shales with silty interbeds and concretions. The thickness is 380 to 420 m. It correlates with the Innkjegla Member of the Carolinefjellet Formation (Parker 1967). Fossil remains are not described.

D.V.Semevskij

CULM SANDSTONES (KULM-SANDSTEIN)

E. Carboniferous

(Nathorst 1910)

Continental coal-bearing deposits reported from central Spitsbergen. The term has later been replaced by "Billefjorden Sandstones" and "Billefjorden Series (Group)".

D.V.Semevskij

CYATHOPHYLLUMKALK, CYATHOPHYLLUM LIMESTONE

Lt. Carboniferous

(Nordenskiöld 1875, Nathorst 1910)

The unit was defined in central Spitsbergen between the Lower Gypsiferous Series and the Spirifer Limestone. A Late Carboniferous age was suggested. In the scheme of Forbes et al. (1958) it is correlated with the Passage Beds, Wordiekammen Limestones and Upper Gypsiferous Series. It is generally equivalent to the Nordenskiöldbreen and Gipshuken formations.

B.P.Gavrilov, D.V.Semevskij

D

DALKJEGLA FORMATION

E. Cretaceous

(Pčelina 1983)

Named from a mountain in Nordenskiöld Land.

Equivalent to the Dalkjegla Member. In all sections, except for those of Festningen and Selmaneset, there is a 5-32 m thick dark grey argillite unit at the base of the formation, forming a marker bed. The age is Early Aptian (based on pollen and spore assemblages).

T.M.Pčelina

DALKJEGLA MEMBER (SANDSTONE)

E. Cretaceous

(Parker 1967)

Named from a mountain in Nordenskiöld Land, Spitsbergen.

Spitsbergen. The unit forms part of the Carolinefjellet Formation. It was first defined as the Lower Lamina Sandstone Member (Hagerman 1925). It rests conformably on the Helvetiafjellet Formation and is conformably overlain by the Innkjelgla Member. The unit consists of interbedded sandstones and argillites, siltstone intercalations, lenses and thin intercalations of gritstones and conglomerates, and nodules of terrigene carbonate. The thickness is 115 to 150 m, in the type section 131 m. Bivalves, rare ammonites, foraminifers and algae occur. According to Pčelina (1983) it correlates with the Dalkjegla Formation.

E.S.Eršova, D.V.Semevskij

DAONELLA LAYERS

M. Triassic

(Wiman 1910)

Named from a characteristic fauna.

Central Spitsbergen, Isfjorden. The unit consists of bituminous, marly argillites, containing calcareous nodules (the latter were identified by Mojsisovičs, 1886, as Daonella Limestones). Their upper part is equivalent to the Ooze Layers. The upper layers are the Upper Saurian Niveau ("Proper Daonella Layers") overlain by the Nathorstites Niveau. The lower layers, 20 m below the upper one, are the "Opened Daonella Layers". The lower boundary of the layers is fairly obscure because thin laminated argillites of the Lower Saurian Niveau are grading into the marly succession. The lower Daonella Layers seem to comprise most of the succession. Chronologically, the Daonella Layers correlate with the Late Anisian (*Frechites laqueatum* Zone) and Ladinian and are incorporated into the Botneheia Formation (Member).

M.V.Korčinskaja

DAONELLA LIMESTONE

M. Triassic

(Mojsisovičs 1886)

A unit containing dark calcareous lenses and nodules rich in organic remains. See Daonella Layers.

D.V.Semevskij

DAONELLA NIVEAU

M. Triassic

(Wiman 1910)

Spitsbergen, Isfjorden area. It is part of the middle Daonella Layers, the so-called "Open Daonella Layers".

M.V.Korčinskaja

DARK GREY TO BLACK SHALE FORMATION

Paleocene

(Kotlukov 1936)

The unit was defined in the Barentsburg area. The thickness is 200 m. It correlates with the Colesbukta Formation.

D.V.Semevskij

DE GEERDALEN FORMATION

Lt. Triassic to E. Jurassic

(Flood et al. 1971)

Named from a valley to the south Sassenfjorden, Spitsbergen.

The unit was defined as a formation on Edgeøya and Barentsøya. It correlates with the De Geerdalen Formation (Buchan et al. 1965). The thickness exceeds 370 m. Birkenmajer incorporated the Formation into the

Torrell Land Group. Mørk et al. (1982) extended the Formation over all of Svalbard, including Hopen.
D.V.Semevskij

DE GEERDALEN MEMBER

Lt. Triassic to E. Jurassic(?)

(Buchan et al. 1965)

Named from a valley south of Sassenfjorden, Spitsbergen.

Eastern Spitsbergen. The unit conformably rests on the Tschermakfjellet Member of the Kapp Toscana Formation and is overlain by eroded "Lias conglomerates" (Brendskardhaugen Bed of the Janusfjellet Formation). It consists of sandstone, siltstone, argillites, thin coaly interbeds. The member is extended to comprise all the "eastern-type" sections. In the west it is probably equivalent to the upper non-marine sandstone/argillite succession of the Kapp Toscana Formation. Flora, rare bivalves and brachyopods occur. The thickness in the type section is 190 m, but increasing in northwestern direction. Flood (1971) raised the member to the rank of a formation for Edgøya and Barentsøya, which was applied by Harland (1974) for Spitsbergen, as well. According to Pčelina (1982) it is part of the Hahnfjella and Isfjorden (upper part) formations and the Bjørnbogen Horizon. Mørk (1982) indicates the thickness in the parastratotype to be 293 m.

M.V.Korčinskaja

DELTADALEN MEMBER

E. Triassic

(Mørk et al. 1982)

Named from a valley in the central Spitsbergen.

Eastern Spitsbergen (eastern-type section), Barentsøya and Edgeøya. The unit consists of shales and sandstones grading into shales interbedded with siltstones. Calcareous nodules are common. It correlates with the Vardebukta Formation (western type section). Ammonites, bivalves and reptile bones occur. The thickness in the type section is 126 m.

D.V.Semevskij

DENSE THICK-FLAGGY PLANT-BEARING SANDSTONE FORMATION Eocene to Oligocene
(Kotlukov 1936)

The unit was defined at the southern coast of Isfjorden. The thickness attains 500 m. It is equivalent to major parts of the Collinderodden and Stolvola Formations.

D.V.Semevskij

DENTALIENSCHICHTEN (LAYERS)

E. Cretaceous

(Nathorst 1910)

Named from characteristic fossils.

Clayey sandstones and sandy argillites interbedded with thin limestones. See Ditrupa Layers.

E.S.Eršova

DICKSONFJORDEN SANDSTONE FORMATION

E. Devonian

(Friend 1961)

Named from a fjord, Spitsbergen.

Dickson Land, Spitsbergen. It consists of up to 1000 m thick sand- and siltstones. Ichthyofauna, ostracods and algal fauna occur. The formation is coeval with the Keltiefjellet and Stjørdalen Formations.

L.G.Murašov

DITRUPA LAYERS

E. Cretaceous

(Stolley 1912)

Named from characteristic fossils.

The unit was defined as "Dentalienschichten" in western Spitsbergen (Nathorst 1910) and renamed after a revision of organic remains. It rests above the Ginkgo Layers, being partially correlatable with the interval between the Upper and Lower Lamina Sandstones (Hagerman 1925). Laminated greenish-grey sandstones, shales interbedded with sandstones and sideritic nodules. Numerous worm burrows, ammonites and pelecypods occur. It also correlates with the upper part of the Carolinenfjellet Formation (Parker 1967).

E.S.Eršova, D.V.Semevskij

DITRUPA SHALE SERIES

E. Cretaceous

(Różyczka 1959)

Named from characteristic fossils.

Spitsbergen. The unit rests on the Barremian Continental Series. The upper boundary is not known. It was first recognized as "Dentalienschiefer" (Nathorst 1910) and later as "Ditrupa Layers" (Stolley 1912). The unit consists of grey shales interbedded with sideritic rocks and spheroidal sideritic concretions. There are many sandstone interbeds. Pelecypods and numerous worm burrows occur. The maximum thickness is about 300 m. It correlates with the Carolinefjellet Formation (Parker 1967). Pčelina (1983) recognized the Dalkjegla and Kvalvågen Formations and the Singerfjellet Horizon within the series.

E.S.Eršova

DREVBREEN FORMATION

M. Triassic

(Birkenmajer 1977)

Named from a glacier in Torell Land, Spitsbergen.

Southern Spitsbergen. It comprises the Passshatten, Somovbreen and Tschermakfjellet members. It rests conformably upon the Triassic Sticky Keep Formation and is commonly overlain by the Late Triassic De Geerdalen Formation with a stratigraphical unconformity. The formation consists of three units: the lower and upper ones are commonly bituminous shales, while calcitic siltstones grading into arenaceous, often bituminous limestones form the middle one. The entire thickness is 115 to 290 m, in the type section 240 m. The formation correlates with the Botneheia Formation and the Tschermakfjellet Member of the Kapp Toscana Formation according to Buchan et al. (1965), the Botneheia Member of the Kongressfjellet and Tschermakfjellet formations according to Flood et al. (1971), and the Botneheia Horizon and the lower part of the Hahnfjella Formation according to Pčelina (1983).

D.V.Semevskij

DUNERFJELLET MEMBER

Lt. Jurassic

(Smith et al. 1976)

Named from a mountain on Svenskøya, Kong Karls Land.

Svenskøya, Kong Karls Land. The upper and lower boundaries are not described. It consists in the lower part of the section of loose, weathered shales in the lower and dense shales in the upper part. The thickness is over 55 m. Ammonites, belemnites and fish remains occur. The unit correlates with the Retziusfjellet Member (Kongsøya, Kong Karls Land), and is coeval with the Agardhfjellet Formation.

E.S.Eršova

E

EBBADALEN FORMATION

M. Carboniferous

(Cutbill & Challinor 1965)

Named from a valley in Bünsow Land, Spitsbergen.

Billefjorden area, Spitsbergen. The unit rests unconformably on Early Carboniferous deposits of the Svenbreen Formation and is overlain by the Nordenskiöldbreen Formation (Middle Carboniferous to Early Jurassic). Basal conglomerates and grey sandstones occur at the base. Up-section, limestones, dolomites, gypsum and anhydrite layers predominate. In western areas, it is replaced by coarse-clastic rocks. The thickness varies between 280 and 700 m. Foraminifers, pelecypods, gastropods and echinoderms occur. The unit forms the basal part of the Gipsdalen Series. It is equivalent in facies to the Peterelskardet, Brøggertinden, Reinodden and Hyrnefjellet formations.

B.P.Gavrilov

EDGEØYA FORMATION

Lt. Triassic

(Lock et al. 1978)

Named from an island.

Edgeøya and Barentsøya. The unit rests with a stratigraphical hiatus (?) on Triassic deposits of the Barentsøya Formation and is conformably overlain by Late Triassic deposits of the Negerfjellet Formation. Two units are distinguished; argillites with abundant clayey nodular siderite, up to 30 m thick, in the lower part, and

predominantly siltstones, up to 100 m thick, in the upper part. Upwards, the succession gets more arenaceous. The thickness of the formation in the type section is 130 m, reaching 165 m on southeastern Edgeøya. Abundant ammonites occur. The unit forms part of the Kapp Toscana Group (Series). According to Mørk (1982) it correlates with the Austjøkelen and Tschermakfjellet formations. According to Pčelina (1983) it correlates with the lower and middle subformations of Hahnfjella Formation.

M.V.Korčinskaja

EFUGLVIKA MEMBER

M. Carboniferous

(Kirkemo 1979)

Named from a bay at the west coast of Bjørnøya.

Bjørnøya. This is the middle one of the three members within the Kåre Formation (Worsley & Edwards 1976). It consists of cherty limestones. The thickness is 70 m. In general it correlates with the base of the upper member within the Kobbekbukta Formation.

D.V.Semevskij

ELATIDES NIVEAU

E. Cretaceous

(Hoel & Orvin 1937)

Equivalent to the "Elatides Layers".

D.V.Semevskij

ELATIDESSCHICHTEN, ELATIDES LAYERS

E. Cretaceous

(Nathorst 1910)

Named from a distinctive flora.

Festningen section, Isfjorden, Spitsbergen. The unit forms part of the so-called "Sandsteinreihe". It overlies the Festningen Sandstone unit and is overlain by clayey sandstones below the Lioplax Layers. It consists of dense sandstones locally containing spherical nodules. At the top there are interbeds of clayey bituminous sandstones and thin coaly intercalations. The thickness is 3 m.

D.V.Semevskij

ELSABREEN CONGLOMERATE BEDS

M. Carboniferous

(Cutbill & Challinor 1965)

Named from a glacier near the mountain Pyramiden, Dickson Land, Spitsbergen.

Pyramiden area. The unit forms part of the Minkinfjellet Member of the Nordenskiöldbreen Formation. It rests unconformably on Early Carboniferous deposits of the Svenbreen Formation and is coeval (?) with the Carronella Beds. The unit consists of red conglomerates and sandstones. The thickness is 170 m.

B.P.Gavrilov

ENDALEN MEMBER

Paleocene

(Steel et al. 1981)

Named from a valley near Adventfjorden, Spitsbergen.

Spitsbergen Trough. The unit forms part of the Firkanten Formation (Barentsburg Formation, Livšic 1967). It rests conformably upon the Todalen Member within the same formation and is conformably overlain by the Basilika Formation (Colesbukta Formation, Livšic 1967). It is laterally replaced by deposits of the Kolthoffberget Member. The rocks are cliff-forming quartzose sandstones, often bioturbated, representing frontal deltaic deposits. Their thickness ranges from 40 to 100 m.

D.V.Semevskij

ESCARPMENT SHALES

M. Triassic

(Gregory 1921)

Named from the morphology of their outcrops.

Central Spitsbergen. The unit is defined in the Sassendalen area where it forms a prominent escarpment. It rests on the "Black Shales and Yellow Flags" (Posidinomya Beds) and is overlain by the "Ooze beds". It consists of foliated argillites locally grading into siltstones, with interbeds and lenses of silty limestones. Four beds have been recognized, in ascending order: 1) earthy limestones, 2) middle nodular bed, 3) paper shales with abundant ammonites, 4) limestone. The unit embraces all Anisian (Korčinskaja 1980) and some Ladinian subunits. The

thickness of the unit is 60 m.

M.V.Korčinskaja

ESTHERIAHAUGEN FORMATION

M. to Lt. Devonian

(Friend 1961)

Named from a mountain in Dickson Land, Spitsbergen.

Dickson Land, Spitsbergen. The unit rests erosively on various horizons of the Devonian Wood Bay Series and is conformably overlain by the Late Devonian Fiskekløfta Formation. It consists of argillites with interbeds and lenses of quartzitic sandstones. The thickness is up to 110 m. Pelecypods and plant fossils occur. It was previously known as "Beds SK 1-2 and F-1,2" (Stensiö 1918) and "1-5" (Vogt 1941). The unit forms part of the Mimerdalen Series.

L.G.Murašov

EUTOMOCERAS HORIZON (TEILZONE, NIVEAU)

M. Triassic

(Frebold 1931)

Named from a characteristic fauna.

Central Spitsbergen. The Isfjorden area. It overlies the Arctoceras Horizon and is overlain by the Gymnotoceras Horizon. It consists of limestones with coprolites and abundant ammonites. The horizon forms one of the two faunal zones within a sequence of up to 70 m thick marly-silty shales overlying the Lower Saurian Niveau. It belongs to the Botneheia Formation (Member). According to Korčinskaja (1982) it is the *Lenotropites caurus* Zone.

M.V.Korčinskaja

EVAPORITE SERIES

Permian

(Bates & Schwarzacher 1958)

Area between Eckman- and Dicksonfjorden, Spitsbergen. The unit was divided into an upper dolomitic member (without equivalent in Cutbill & Challinor's, 1965, scheme), gypsum and anhydritic members (corresponding to the basal gypsum zone of the Gipshuken Formation) and a lower dolomitic member (Kiaerfjellet Beds). The thickness is not known.

D.V.Semevskij

F

FARDALEN-SCHICHTEN

Eocene

(Vonderbank 1970)

Named from a river valley in Nordenskiöld Land, Spitsbergen.

Spitsbergen Trough. The Fardalen Beds represent the third of the four sedimentation cycles that make up the Paleogene strata. They comprise three horizons, in ascending order: thin flaggy sandstones, argillites and black sandstones, coarse-grained sandstones. Their thickness attains 435 m. The strata correlates with most of the Frysjaodden and Collinderodden Formations. It is also involved in a member of coarse-grained sandstones, up to 20 m thick, belonging to the upper part of the Hollendardalen Formation, and an argillaceous member, up to 10 m thick, of the lowermost Storvola Formation.

D.V.Semevskij

FESTNINGEN MEMBER

E. Cretaceous

(Parker 1967)

Named from a point in Isfjorden, Nordenskiöld Land, Spitsbergen.

Spitsbergen. The unit forms part of the Helvetiafjellet Formation. It was first defined as the Festningen Sandstone (Nathorst 1910). It rests unconformably on the Rurikfjellet Formation (Member) and is conformably overlain by the Glitrefjellet Member of the Helvetiafjellet Formation. It consists of massive, quartzose sandstones and frequent interbeds and lenses of conglomerates. The thickness is 4 to 30 m, being 29.5 m in the type section.

E.S.Eršova

FESTNINGEN SANDSTONE, FESTNINGSSANDSTEIN

E. Cretaceous

(Nathorst 1913)

Named from a point in Isfjord, Spitsbergen.

The Festningen section. The unit overlies the Aucella Shale and is overlain by the Elatides Layers. It consists of dense sandstone. The unit is a good marker. The thickness is 20 to 35 m. Fossils have not been not described. It correlates with the Festningen Member of the Helvetiafjellet Formation (Parker 1967), basal part of the Helvetiafjellet Formation (Pchelina 1983), Continental Series (Rożycki 1959)

D.V.Semevskij

FIRKANTEN FORMATION

Paleocene

(Major & Nagy 1972)

Named from a mountain at the north shore of Van Keulenfjorden, Spitsbergen.

The unit was recognized in the eastern parts of Nordenskiöld Land and Nathorst Land. The thickness is 80 to 140 m. It correlates with the Barentsburg Formation.

D.V.Semevskij

FISCH-NIVEAU

E. Triassic

(Wiman 1910)

Named from ichthyofaunal remains.

South Sassenfjorden shore, Spitsbergen. Based on ammonites from the *Ceratites* (= *Arctoceras*) *polaris* group discovered besides fish remains, it was correlated with a similar horizon within the Posidonomya Limestone defined by Mojsisovičs (1886).

M.V.Korčinskaja

FISKEKLØFTA FORMATION

Lt. Devonian

(Friend 1961)

Named from a ravine in Mimerdalen in Dickson Land, Spitsbergen.

Dickson Land, Spitsbergen. The unit rests conformably on deposits of the Estheriahaugen Formation of Middle to Late Devonian age and is conformably overlain by Late Devonian rocks of the Planteryggen Formation. It consists of argillites, siltstones and sandstones. The thickness is 145 m. Ichthyofauna occurs. Previously, it was reported as bed "g" (Stensiö 1918) and beds "6-7" (Vogt 1941). The unit forms part of the Mimerdalen Series.

L.G.Murašov

FISKEKLØFTA SERIES

See Mimerdalen Series.

L.G.Murašov

FISSILE SANDSTONE SERIES

Eocene

(Nathorst 1910)

The unit was recognized in the northern Spitsbergen Trough. It correlates with the Collinderodden Formation.

D.V.Semevskij

FLAGGY SANDSTONE SERIES

Eocene

(Orvin 1940)

The unit was recognized in the Spitsbergen Trough. It correlates with the Collinderodden Formation.

D.V.Semevskij

FLATSALEN FORMATION

Lt. Triassic

(Smith et al. 1975)

Named from a pass on Hopen.

Hopen. The unit rests conformably on the Late Triassic Iversenfjellet Formation and is overlain by the hiatal Jurassic deposits of the Lyngfjellet Formation. It consists of argillites with interbeds of siltstones and ferro-carbonate nodules. Some beds contain *Pterosirenites* (=beds with *Argosirenites*) (Korčinskaja 1980). Ammonoids, molluscs. The thickness is 55 m. According to Mørk et al. (1982) the deposits of the unit form part of the

Wilhelmøya Formation. According to Pčelina (1980) it belongs to the Bjørnbogen Horizon. The formation is coeval with the Bjørnbogen, Tvillingodden, Keilhaufjellet formations. It includes a basal member of carboante siltstones.

T.M.Pčelina

FLATSALEN MEMBER

Lt. Triassic

(Bjerke & Manum 1977)

Named from a mountain on Hopen.

Hopen. Equivalent of the Flatsalen Formation according to Smith (1975). However, it also includes the Basal Member of the Wilhelmøya Formation of Worsley (1973) *. The unit forms part of the Wilhelmøya Formation.

D.V.Semevskij

* not agreed by T.M.Pčelina

FLATSALEN SHALE FORMATION

Lt. Triassic

(Smith et al. 1975)

See Flatsalen Formation.

T.M.Pčelina

FORKDALEN FORMATION

M. Devonian

(Murašov & Mokin 1976)

Named from a valley in Andree Land, Spitsbergen.

Andree Land. The unit rests conformably on Devonian deposits of the Tavlefjellet Formation and is conformably overlain by the Wijde Bay Formation. It is composed of interbedded sandstones increasing in volume up-section, siltstone and argillites. Clay-carbonate nodules are present. The thickness is 630 m. Ichthyofauna, pelecypods and plant fossils occur.

L.G.Murašov

FORLANDSUNDET GROUP

Paleogene

(Harland 1969)

Named from a strait, Spitsbergen.

This group includes Paleogene deposits of up to 4000 m thickness within the Forlandsundet Graben, Spitsbergen. It is subdivided into several formations.

D.V.Semevskij

FOSSE SANDSTEIN

Lt. Triassic

(Hoel & Orvin 1937)

Named from numerous waterfalls at an escarpment formed by this sandstone unit.

Central Spitsbergen. The unit is composed of laminated sandstones containing plant remains and coal interbeds. Worm burrows are found. The thickness is 15 m in the Festningen section, but it reaches 28 m in the Van Keulenfjorden area. According to Korčinskaja (1982) it corresponds to the *Nathorstites mcconnelli* Zone, according to Pčelina (1983) to top of the Van Keulenfjorden Formation (Middle Triassic)*.

D.V.Semevskij

* added by T.M.Pčelina

FRAENKELRYGGEN FORMATION

E. Devonian

(Kiaer 1918)

Named from the mountain "Fraenkelryggen" in Haakon VII Land, Spitsbergen.

Liefdefjorden area, Spitsbergen. The unit conformably overlies Devonian deposits of the Andreebreen Formation and is conformably overlain by Devonian rocks of the Ben Nevis Formation. Red and multicoloured sandstones and siltstones with acidic tuff/lava interbeds occur at the base. Vogt (1926) recognized six biostratigraphical horizons within the formation. The unit forms part of the Red Bay Series.

L.G.Murašov

FRYSJAODDEN FORMATION

Eocene

(Livšic 1967)

Named from a point at the south coast of Van Keulenfjorden, Spitsbergen.

Spitsbergen Trough. The formation rests unconformably upon deposits of the Hollendardalen and Grumant Formations and is conformably overlain by Paleogene deposits of the Collinderodden Formation. It consists of argillites. The thickness varies between 200 to 400 m, increasing towards the centre of the basin. Foraminifers occur rarely. It has previously been designed as the "Upper Black Shale Series" (Nathorst 1910), "Middle Shale Formation" (Hoel 1929), "Soft Black Shale Formation" (Kotlukov 1936), "Upper Argillaceous Formation" (Livšic 1965) and "Gilsonryggen Formation" (Major & Nagy 1972).

D.V.Semevskij

FUGLE SUBFORMATION

E. Carboniferous

(Pavlov & Evdokimova 1983)

Named from a point (Fugleodden)* on Bjørnøya.

Bjørnøya. This is the upper of the five subformations of the Røedvika Formation, forming part of the Ursa Sandstone Unit. It conformably overlies the Tunheim Subformation and is erosively overlain by Carboniferous deposits of the Nordkapp Formation. It consists of quartzite sandstones. The thickness exceeds 30 m. The unit corresponds in general to the coal-barren part of the Tunheim Member of Worsley & Edwards' (1976) scheme.

D.V.Semevskij

* the editor

FUSULINAGESTEIN

Lt. Carboniferous

(Göes 1884, Nathorst 1910)

This is a member, up to 5 m thick, in the middle of the Cyathophyllum Limestone. In Forbes's et al. (1958) scheme it is referred to as the middle Wordiekammen Limestones. It correlates with the Brucebyen Beds of the Tyrrellfjellet Member within the Nordenskiöldbreen Formation. See also "Fusulina Limestone".

D.V.Semevskij

FUSULINAKALK, FUSULINA LIMESTONE

E. Permian

(Anderson 1900)

Bjørnøya. The unit correlates with the Kapp Duner Formation. Göes (1884) used the term for an interbed of bituminous fusulina-rich limestone, 5 m thick, within the Cyathophyllum Limestone (Wordiekammen Limestone), commonly 300 to 350 below the top. See also "Fusulinagestein".

D.V.Semevskij

G

GERRITBREEN BEDS

Lt. Carboniferous

(Cutbill & Challinor 1965)

Named from a glacier in Bünsow land, Spitsbergen.

Central Spitsbergen, as well as Ny Friesland and Brøggerhalvøya. The unit forms part of the Cadellfjellet Member and its correlatives, i.e. Kapitol and Mørebreven Members. It rests conformably on the Middle Carboniferous Minkinfjellet Member and is conformably overlain by the Late Carboniferous Matthewbreen Beds. It consists of limestones, micrites in the Billefjorden area (Spitsbergen) and coarser-grained rocks in other regions. The fusulinid zone of *Waeringella usvae* is observed. The thickness is up to 180 m (Sosipatrova 1967).

B.P.Gavrilov

GILSONRYGGEN FORMATION

Eocene

(Major & Nagy 1972)

Named from mountains in the central Nordenskiöld Land, Spitsbergen.

Nordenskiöld Land and Nathorst Land. The thickness is 235 m. It correlates with the Frysjaodden Formation.

D.V.Semevskij

GINKGO NIVEAU
(Hoel & Orvin 1937)
See Ginkgo Layers.
D.V.Semevskij

E. Cretaceous

GINKGOSCHICHTEN (GINKGO LAYERS)
(Nathorst 1910)

E. Cretaceous

Named from a characteristic flora.

Festningen section, Isfjorden, Spitsbergen. They form part of the so-called "Sandsteinreihe", being overlain by sandstones resting on the Pityophyllum Layers. They are overlain by a sandstone succession forming the base of the Ditrupa Layers. The unit consists of argillites containing thin sandstone interbeds. Abundant plant remains, *Ginkgo digitata* (Brogniart). Their thickness is 0.9 m.

D.V.Semevskij

GIPSDALEN SERIES (GROUP)
(Cutbill & Challinor 1965)

M. Carboniferous to E. Permian

Named from a valley in central Spitsbergen.

Svalbard, including Bjørnøya. This unit unconformably (sometimes angular) overlies deposits of the Early Carboniferous Billefjorden Group (or older rocks) and is erosively overlain by the Late Permian Tempelfjorden Group. The succession is variable in facies. Small intraformational unconformities are abundant. Clastic deposits ranging from conglomerates to siltstones and argillites are common at the base. The series primarily consists of gypsum, anhydrites and limestones, locally interbedded with clastic rocks. The thickness varies between 600 and 900 m. Involves the Lower gypsum unit and the Cyathophyllum Limestone recognized by Nathorst (1910), the Campbellryggen Group, the Wordiekammen Limestones and the "Upper Gypsiferous Series" (Forbes et al. 1958). Two types of sections are often recognized: an eastern (central Spitsbergen) and a western (west coast) type. In places, intermediate types are identified. In central Spitsbergen the Gipsdalen Group is subdivided into the Ebbadalen, Nordenskiöldbreen and Gipshuken formations, in the Hornsund area into the Hymefjellet, Treskelodden and Gipshuken formations, in western Spitsbergen into the Petrelskardet, Tårnkanten, Nordenskiöldbreen and Gipshuken formations, in the Van Keulenfjorden area into the Reinodden and Gipshuken Formations. On Bjørnøya it comprises the Landnørdingsvika, Kobbekbukta, Kapp Hanna and Kapp Duner formations.

B.P.Gavrilov, D.V.Semevskij

GIPSHUKEN FORMATION
(Cutbill & Challinor 1965)

E. Permian

Named from a point in Bünsow Land, Spitsbergen.

Svalbard (except for the southernmost part). The unit forms part of the Gipsdalen Series embracing the Kluten Breccia and Hardbardbreen Sandstone units, the Lower Gypsum Zone (central Spitsbergen) and Upper Gypsum Zone (western Nordenskiöld Land, Spitsbergen). It rests transgressively on Carboniferous rocks of different age. In central Spitsbergen it lies conformably on the Tyrrellfjellet Member of the Nordenskiöldbreen Formation. On Nordaustlandet it lies on pre-Devonian rocks. The unit is overlain (in places erosively) by the Permian Kapp Starostin Formation. It is composed of gypsum, dolomites, anhydrites, shales and carbonate breccia. According to Sosipatrova (1967) there are beds containing *Fronicularia multicamerata*. Small brachiopods and foraminifers occur. The thickness is up to 350 to 380 m. The deposits of the formation were originally identified as "Gypsum Beds" (Nathorst 1910) or "Upper Gypsiferous Series" (Gee et al. 1953).

B.P.Gavrilov

GJELSVIKFJELLET FORMATION
(Murašov & Mokin 1976)

M. Devonian

Named from Gjelsvikfjellet in Andree Land, Spitsbergen.

Andree Land, Spitsbergen. The unit rests conformably on the Devonian Stjørdalen Formation and is conformably overlain by the Devonian Tavlefjellet Formation. It is subdivided into the Verdalen and Skamdalen subformations. It is composed of red and grey siltstones and argillites with limestone interbeds and lenses. The thickness is 250 m. The Verdalen and Skamdalen Subformations are parts of the Wood Bay and Grey Hoek Series, respectively. Ichthyofauna occurs.

L.G.Murašov

GLITREFJELLET MEMBER**E. Cretaceous**

(Parker 1967)

Named from a mountain in Nordenskiöld Land, Spitsbergen.

Spitsbergen. The unit forms part of the Helvetiafjellet Formation. It was originally identified as "Sandsteinreihe" (Nathorst 1910), and later as the Coastal Sandstone (Hagerman 1925). It rests conformably on the Festningen Member and is conformably overlain by the Dalkjegla Member (Formation) dated as Aptian. The unit consists of cross-bedded, coarse-grained rippled sandstones interbedded with coaly argillites and coal intercalations. Wood remains occur. The thickness of the type section is 69 m.

E.S.Eršova

GONIODISCUS NODOSUS HORIZON**E. Triassic**

(Frebold 1929, 1930)

Equivalent of the "Lowest Nodule Beds" (Sticky Keep Member of the Barentsøya Formation, Mørk et al. (1982)

M.V.Korčinskaja

GREENISH-GREY DENSE SANDSTONE FORMATION**Paleocene**

(Kotlukov 1936)

The unit was defined in the Barentsburg area, Spitsbergen. The thickness is 250 m. It correlates with the Grumant Formation.

D.V.Semevskij

GREEN SANDSTONE FORMATION**Paleocene to Eocene**

(Orvin 1934)

The unit was defined in the Kongsfjorden area, Spitsbergen. The thickness is 120 m. It correlates with the Ny Ålesund Formation. It was identified by Ljutkevič (1937) to the south of Isfjorden, where its thickness is 250 m, and where it correlates with the Grumant Formation.

D.V.Semevskij

GREEN SANDSTONE SERIES**Paleocene to Eocene**

(Nathorst 1910)

The unit was recognized in the southern part of the Spitsbergen Trough. Its thickness is 200 to 250 m. It correlates with the Hollenderdalen and Grumant Formations.

D.V.Semevskij

GREY HOEK FORMATION**M. Devonian**

(Friend et al. 1966)

It is correlated with the Grey Hoek Series.

D.V.Semevskij

GREY HOEK SERIES**M. Devonian**

(Holtedahl 1914)

Named from the point Grey Hoek (Gråhuken) in Andree Land.

Andree Land, Spitsbergen. The unit rests conformably on the Devonian Wood Bay Series. It consists of grey sandstones, siltstones and argillites. Murašov & Mokin (1976) recognized within the series the upper part of the Gjelsvikfjellet Formation and the Tavlefjellet and Førkaldalen formations. According to Friend et al. (1966) the series has a formation rank and is not divided into subunits. The thickness is up to 1000 m. Ichthyofauna, pelecypods, brachiopods, ostracods and plant fossils occur. An Emsian age is probable for the lowermost part.

L.G.Murašov

GREY SANDSTONE FORMATION**Paleocene to Eocene**

(Orvin 1934)

The unit was recognized in the Kongsfjorden area, Spitsbergen. It is equivalent to the Ny Ålesund Formation.

D.V.Semevskij

GRIPPEA NIVEAU
(Wiman 1928)

E. Triassic

Central Spitsbergen. The unit is located between the Fish Niveau and the Lower Saurian Niveau. It is a nodule-bearing horizon in oily shales. Reptile bones and ammonites occur. Organic remains are abundant all over Spitsbergen except for the Festningen section, where they are missing. The thickness is about 30 m. The unit forms part of the Posidonomya shales. According to Korčinskaja (1982) it correlates with the *Keyserlingites subrobustus* Subzone (upper substage of the Olenekian Stage). According to Buchan et al. (1965) it belongs to the Kaosfjellett Member of the Sticky Keep Formation, according to Mørk et al. (1982) to the Sticky Keep Member, Barentsøya Formation, and according to Pčelina (1983) to the upper subformation of the Wichebukta Formation.

M.V.Korčinskaja

GRUMANTDALEN-SCHICHTEN
(Vonderbank 1970)

Paleocene

Named from a valley in Nordenskiöld Land, Spitsbergen.

Spitsbergen Trough. The unit represents the second (in ascending order) of the four Paleogene sedimentation cycles and comprises five horizons (in ascending order): bituminous argillites and sandstones, olive-green sandstones, yellow-brown sandstones, bituminous argillites, conglomeratic sandstones. The thickness ranges from 215 m in the east to 410 m in the central part of the trough. The Grumantdalen-Schichten correlate with the Colesbukta, Grumant and Hollendardalen formations, except for the coarse-grained sandstone unit resting in the upper part of the latter, which is assigned to the Fardalen-Schichten. The strata also comprises a unit of conglomerates and sandstones, up to 15 m thick, from the upper part of the Barentsburg Formation. Danian age is suggested.

D.V.Semevskij

GRUMANT FORMATION
(Livšic 1967)

Eocene

Named from the Grumant Mine, Nordenskiöld Land, Spitsbergen.

Spitsbergen Trough. It rests conformably on the Paleocene Colesbukta Formation and is conformably overlain by the Eocene Hollendardalen Formation. There are fine-grained sandstones and sandy siltstones, occasionally subordinate argillite interbeds. The thickness varies from 160 m (marginal trough) to 240 m (central trough). Pelecypods occur rarely. Previously, the formation has been designated "Greenish Grey Dense Sandstone Formation" (Kotlukov 1936) and "Green Sandstone Formation" (Ljutkevič 1937). The bulk of the Grumant and Hollendardalen formations was recognized by Nathorst (1910) as the "Green Sandstones Series".

D.V.Semevskij

GRÅHUKEN SERIES
See Grey Hoek Series.

L.G.Murašov

GYMNOCERAS HORIZON (TEILZONE, SUBZONE)
(Frebold 1931)

M. Triassic

Named from a characteristic fauna.

Central Spitsbergen. The unit overlies the Eutomoceras Horizon and is overlain by the Lindsøroemi Horizon. It consists of dark brown shales and marls with ammonite remains. This is the upper of two fossiliferous zones (in association with the Eutomoceras Horizon) in the 70 m thick succession of clayey/marly shales, overlying the Lower Saurian Niveau. It is assigned to the Botneheia Formation (Member).

D.V.Semevskij

GYPSUM BEDS*
(Nathorst 1910)

E. Permian

Equivalent to the Gipsruken Formation of the Gipsdalen Series.

B.P.Gavrilov

* added to this translation by the author

GYPSUM MEMBER

Permian

(Bates & Schwarzacher 1958)

The unit occurs in the area between Ekman- and Dicksonfjorden, Spitsbergen, forming part of the Evaporite Series. According to Cutbill and Challinor (1965) it correlates with the upper part of the Lower Gypsum Zone in the Gipshuken Formation. The thickness is not indicated.

D.V.Semevskij

H

HAHNFJELLA FORMATION

Lt. Triassic

(Pčelina 1983)

Named from a mountain near Wichebukta, Spitsbergen.

Svalbard, including Bjørnøya. The unit rests conformably on Middle Triassic deposits of the Botneheia Horizon (on Bjørnøya, it rests erosively on the Early Triassic Wichebukta Horizon) and is overlain by Late Triassic deposits of the Isfjorden Formation (conformably in most places of the archipelago) or Keilhaufjellet Formation (unconformably near Sørkapp Land, Hornsund, Spitsbergen). In the scheme by Mørk et al. (1982) the formation correlates with the Austjøkelen (Sørkapp Land), Tschermakfjellet (rest of Spitsbergen) or Skuld (Bjørnøya) formations and most of the De Geerdalen Formation. On Sørkapp Land only the lower beds of the formation occur, whereas only the upper parts are reported from Hopen. The unit consists of siltstones, argillites, sandstones, nodules and carbonate strata; coal and coaly interbeds occur. (Three subformation are recognized: A lower one, 10-85 m thick, containing ankeritic/sideritic nodules and phosphate concretions in eastern areas, a middle (30-130 m) containing argillites and siltstones, and an upper one of siltstones, sandstones and argillites (150 to 200 m).)* Ammonoids, bivalves, echinoderms, reptiles and plant fossils occur. The thickness is 70 to 430 m. Korčinskaja (1975) identified *Nathorstites tenuis* zone within the lower, and *Lima*, *Myophoria* and *Pleurophorus* beds within the upper subformation.

T.M.Pčelina

* added to this translation by the author

HALOBIA LIMESTONE (ZONE)

Lt. Triassic

(F.Frech in: Noetling 1903)

Named from a distinctive fauna.

Spitsbergen. The unit is composed of brownish limestones and black, dense, marly shales containing *Halobia zitteli* Lind. and ammonite remains. Two subzones have been recognized: one containing *Halobia* cf. *neumayri* Bittn. (Halobia Horizon by Frebold 1931) at the top and the other with *Halobia zitteli* at the base. It essentially correlates with the Nathorstites Niveau, Upper Nodule Beds. Mojsisovičs (1886) recognized this part of the section as beds containing *Halobia zitteli*. Korčinskaja (1975) assigned it to the *Nathorstites tenuis* Zone of Carnian age (Tschermakfjellet Formation according to Mørk et al. 1982; lower subformation of the Hahnfjella Formation according to Pčelina, 1983).

M.V.Korčinskaja

HALOBIA ZITTELI BED

Lt. Triassic

(Mojsisovičs 1886)

Base of the Halobia Limestone Zone. The top of this zone is the *Halobia* cf. *neumayri* Subzone.

M.V.Korčinskaja

HAMBERGFJELLET FORMATION

E. Permian

(Worsley & Eswards 1976)

Named from a mountain on southern Bjørnøya.

Bjørnøya. Equivalent of the Alfredfjellet Formation. According to the authors, it reaches a thickness of 50 m.

D.V.Semevskij

HARBARDBREEN SANDSTONE MEMBER

E. Permian

(Cutbill & Challinor 1965)

Named from a glacier at Wahlenbergfjorden, Nordaustlandet.

Nordaustlandet. The unit rests on pre-Devonian rocks. Overlying rocks are not known. It forms part of the basal Gipshuken Formation within the Gypsdaalen Group. It is coeval with the Kloten Member and the Lower Gypsum Zone. The unit consists of multicoloured sandstones. The thickness exceeds 50 m.

B.P.Gavrilov

HELVETIAFJELLET FORMATION

E. Cretaceous

(Parker 1967)

Named from a mountain in Nordenskiöld Land, Spitsbergen.

Spitsbergen. It overlies the Rurikfjellet Formation (Horizon; Pčelina 1985) conformably in southern Spitsbergen, but with a stratigraphical unconformity in the remaining areas, and is conformably overlain by the Cretaceous Carolinenfjellet Formation. The unit is composed of sandstones, siltstones, with argillite and thin coaly interbeds, conglomerate lenses and intercalations. Tuffs and tuffaceous sandstones occur in the eastern areas. On Sørkapp Land at the bottom of the succession, 40 m thick sandstones with interbedded siltstones occur (Kikutodden Member, Pčelina 1983). Plant remains, inocerams and foraminifers are observed in Sørkapp Land. The thickness of the type section is 53 m, while the overall thickness is 50 to 185 m. The formation is divided into the Festningen and Glitrefjellet Members (Parker 1967).

E.S.Eršova, T.M.Pčelina, B.P.Gavrilov

HIEROGLYPHIC SERIES

E. Triassic

(Różycki 1959)

Named from the rock texture.

Southern Spitsbergen. An Early Triassic rock complex. The name is not used.

D.V.Semevskij

HOELBREEN MEMBER

E. Carboniferous

(Cutbill & Challinor 1965)

Named from a glacier in central Spitsbergen.

Spitsbergen. The unit forms part of the Hørbyebreen Formation (upper member). It rests conformably on the Early Carboniferous deposits of the Triungen Member and is erosively overlain by the Early Carboniferous deposits of the Svenbreen Formation. Shales with thin interbeds of sandstones and coaly intercalations, including some of workable thickness. The thickness is 90 to 170 m. This is the uppermost part of the *Rarituberculatus* microflora zone (Tournaisian) and the lower half of the *Aurita* Zone (Visean).

B.P.Gavrilov, D.V.Semevskij

HOLLENDARDALEN FORMATION

Eocene

(Livšić 1967)

Named from a river valley, Nordenskiöld Land, Spitsbergen.

Nordenskiöld Land and Nathorst Land, Spitsbergen. It conformably overlies the Grumant Formation and is erosively overlain by Paleogene deposits of the Frysjaodden Formation. It is divided into two subformations; the upper one consisting of up to 60 m thick argillites, the lower one yielding up to 80 m thick sandstones with interbeds of siltstones and argillites. The overall thickness attains 130-140 m. Abundant pelecypods occur. The formation has previously been named "Shale-Alternated Greenish Grey Sandstone Formation" (Kotlukov 1936), "Shaly Green Sandstone" (Ljutkevič 1937) and "Lower Transitional Formation" (Livšić 1965).

D.V.Semevskij

HORSUNDNESET BEDS

E. Carboniferous

(Siödlecki & Turnau 1964)

Equivalent of the Hornsundneset Formation.

D.V.Semevskij

HORNSUNDNESET FORMATION

E. Carboniferous

(Cutbill & Challinor 1965, Siedlecki & Turnau 1960, 1964)

Named from a point at Hornsund, Spitsbergen.

Southern Spitsbergen. The unit forms part of the Billefjorden Series. It is coeval with the Sporehøgda Member of the Svenbreen Formation or the Orustdalen Formation. It rests with a stratigraphical and angular unconformity on pre-Devonian rocks and is conformably overlain by the Early Carboniferous deposits of the Sergeijevfjellet Formation. The unit is composed of quartzite sandstones, siltstones and argillites. The thickness is 720 m at the west coast, decreasing eastward due to erosion down to 50 m. Miospores and plant fossils occur.

B.P.Gavrilov, D.V.Semevskij

HOVTINDEN MEMBER

Lt. Permian

(Cutbill & Challinor 1965)

Named from a mountain near Hornsund, Spitsbergen.

Spitsbergen. The unit rests conformably on the Late Permian Svenskeegga Member and is overlain by Early Triassic deposits. It is the upper member of the Kapp Starostin Formation. It consists of shales, siltstones, sandstones which often are glauconitic. The thickness is up to 220 m. It represents the "Middle and Upper Brachiopod Cherts" in the scheme by Forbes et al. (1958).

B.P.Gavrilov

HULTBERGET MEMBER

E. Carboniferous

(Cutbill & Challinor 1965)

Named from a mountain in central Spitsbergen.

Central Spitsbergen including the Ny Friesland Peninsula. This is the upper member of the Svenbreen Formation. It conformably overlies the Early Carboniferous deposits of the Sporehøgda Formation and is overlain by the Middle Carboniferous deposits of the Ebbadalen Formation without a visible unconformity. It consists of red and grey shales and sandstones, with coaly interbeds at the base, and coaly argillites. In the upper part lenses of conglomerates occur. The thickness exceeds 125 m. It represents the top of the *Aurita* microflora zone (Serpukhovian).

B.P.Gavrilov, D.V.Semevskij

HUSTEDIAKALK, HUSTEDIA LIMESTONE

E. Triassic

(Nathorst 1910)

A layer similar to the Retzia Limestone with *Retzia nathorsti* Lund and *Hustedia remota* Eick.

M.V.Korčinskaja

HYRNEFJELLET FORMATION

M. Carboniferous

(Birkenmajer 1959, 1964)

Named from a mountain at Hornsund, Spitsbergen.

Hornsund area. The lower boundary is not known*. It is unconformably overlain by Carboniferous to Permian deposits of the Treskelodden Formation. It consists of red, less frequently multicoloured sandstones and conglomerates, as well as shale interbeds. It forms part of the Gipsdalen Series, similar in facies to the Ebbadalen Formation. The thickness exceeds 270 m. Non-fossiliferous.

B.P.Gavrilov

* The lower boundary is an unconformity on top of the Adriabukta Formation (Birkenmajer 1964). The editor.

HYRNEFJELLET FORMATION

M. Triassic

(Pčelina 1983)

Named from a mountain at Hornsund, Spitsbergen.

Sørkapp Land area. Spitsbergen. The unit rests erosively on the Pitnerodden Formation and is conformably overlain by deposits of the Van Keulenfjorden Formation. It is equivalent to coeval beds of the Bravaisberget and Botneheia formations, namely the middle to upper substages of the Anisian and the lower substage of the Ladinian stage. It consists of silty/clayey carbonate rocks, carbonate siltstones, sandstones, phosphate concretions. Ammonoids, radiolaria, foraminifers, algae and reptile remains occur. In the scheme by Mørk et al. (1982) it correlates with the Bravaisberget Formation. The thickness is 18 to 36 m.

T.M.Pčelina

HØRBYEBREEN FORMATION

E. Carboniferous

(Cutbill & Challinor 1965)

Named from a glacier on central Spitsbergen.

Central Spitsbergen. The unit forms part of the Billefjorden Series. It is subdivided into the Triungen and Hoelbreen members. It rests in stratigraphical and angular unconformity on Precambrian or Devonian deposits and is erosively overlain by the Early Carboniferous deposits of the Svenbreen Formation. The unit is composed of conglomerates, sandstones, shales, interbeds of coals, including some of workable thickness. The entire thickness is 150 to 300 m. The *Rarituberculatus* microfloral zone (Tournaisian) and the basal *Aurita* Zone (Visean) are observed.

D.V.Semevskij

HÅRFAGREHAUGEN MEMBER

E. Cretaceous

(Smith et al. 1976)

Named from a highland on Kongsøya, Kong Karls Land.

Western Kong Karls Land. The unit rests on the eroded Tordenskjoldberget Member. The upper boundary is not known. It consists of sandstones with interbeds of argillites and siltstones. There are thin interbeds of coal and coaly material as well as lava flows. Plant remains occur. The thickness is 14 m. The unit is coeval with the Kükenthalfjellet Member and the Johnsenberget Member on Kong Karls Land and forms part of the Kong Karls Land Formation.

E.S.Eršova

I

INGEBRIGTSENBUKTA MEMBER

E. to Lt. Jurassic

(Birkenmajer 1975)

Named from a bay at the south coast of Van Keulenfjorden, Spitsbergen.

Southern Spitsbergen. The unit was first recognized by Różycki (1959) as a series. It rests unconformably on the hiatal surface of the De Geerdalen Formation and is unconformably overlain by the Tirolarpasset Member. It consists of dark, often bituminous, shales interbedded with ferriferous rocks. The thickness is 40 to 245 m. Ammonites and bivalves occur. The unit forms part of the Janusfjellet Formation and correlates with the coeval part of the Agardhfjellet Member (Formation, according to Pčelina, 1983).

E.S.Eršova

INGEBRIGTSENBUKTA SERIES

M. to Lt. Cretaceous

(Różycki 1959)

Equivalent of the Ingebrigtsenbukta Member.

E.S.Eršova

INNKJEGLA MEMBER (SHALE) E. Cretaceous

(Parker 1967)

Named from a mountain in Nordenskiöld Land, Spitsbergen.

Spitsbergen. The unit forms part of the Carolinefjellet Formation. It was first recognized as Cretaceous Shale Member (Hagerman 1925). It rests conformably on the Dalkjegla Member and is conformably overlain by the Langstakken Member. The unit consists of argillites interbedded with siltstones, sandstones and siltstone nodules. The thickness is 321 to 430 m, in type section 429.5 m. Bivalves and, more rarely, ammonites occur. According to Pčelina (1983) it correlates with the Singerfjellet Horizon and the lower part of the Kvalvågen Formation.

E.S.Eršova

ISFJORDEN FORMATION

Lt. Triassic

(Pčelina 1983)

Named from a fiord of Spitsbergen.

Svalbard, except for southern Spitsbergen and Sassenfjorden, especially typical of the western areas. Occurs also on Hopen. The Van Keulenfjorden and Hornsund areas show only the lower beds of the formation. The Isfjorden Formation belongs to the lower part of the lower Norian substage. It rests conformably on the Late

Triassic Hahnfjella Formation with a sharp boundary and is overlain by the Late Triassic Bjørnbogen Formation. According to Mørk et al. (1982) it correlates with the upper part of the De Geerdalen Formation. The unit consists of argillites, siltstones and sandstones interbedded with carbonate. Lenses and interbeds of gritstone and fine-pebble conglomerate occur in the upper part of the section. (Markers are multicoloured silty clay, clayey carbonate rocks and bluish-black rocks containing sideritic nodules.)* Conchostracs and bivalves occur. The thickness is 45 to 225 m.

T.M. Pčelina

* added to this translation by the author

ISKLETTEN MEMBER

E. Triassic

(Buchan et al. 1965)

Named from a mountain in Oscar II Land, Spitsbergen.

The unit forms the lower part of the Sticky Keep Formation. It consists of alternated shales and siltstones. Abundant calcareous nodules occur. The thickness is 154 m in the type section.

M.V. Korčinskaja

IVERSENFJELLET FORMATION

Lt. Triassic

(Smith et al. 1975)

Named from a mountain on Hopen.

Hopen. The lower boundary is not exposed. The unit is conformably overlain by the Late Triassic Flatsalen Formation. In the lower part of the section massive sandstones are predominant, whereas calcareous sandstones are common in the upper part. Bivalves and plant fossils occur. The thickness is 325 to 380 m. In the schemes by Worsley (1973) and Mørk et al. (1982) it correlates with the De Geerdalen Formation and the Basal Member of the Wilhelmsøya Formation; in Pčelina's (1983) scheme, it corresponds to the upper part of the Hahnfjella Formation and the Isfjorden Formation. The formation ranges from Late Carnian to Norian or even Rhaetian (?) age.

M.V. Korčinskaja

IVERSENFJELLET MEMBER

Lt. Triassic

(Bjerke & Manum 1977)

Named from a mountain on Hopen.

Hopen. Equivalent to the Iversenfjellet Formation (according to Smith, 1975) except for the bulk of the Basal Member of the Wilhelmsøya Formation, which is grouped with Worsley's (1973) De Geerdalen Formation. It has been dated palynologically as Norian to Early Rhaetian.

D.V. Semevskij

J

JANUSFJELLET FORMATION

M. Jurassic to E. Cretaceous

(Birkenmajer 1975)

Named from a mountain in Nordenskiöld Land, Spitsbergen.

Spitsbergen. The unit was first recognized as a subgroup (Parker 1967). It is subdivided into the Agardhfjellet and Rurikfjellet Members (central Spitsbergen) and the Ingebrigtsenbukta, Tirolarpasset and Ullaberget members (southern Spitsbergen). There are three markers: the basal conglomerate (Brentskardhaugen Bed), the Myklegardfjellet Bed at the base of the Rurikfjellet Member, and the Polakkfjellet Bed at the base of the Tirolarpasset Member. The unit consists of dark, often bituminous argillites with interbeds of siltstones and sandstones. The thickness is 500 to 700 m in central, and 180 to 795 m in the southern part of Spitsbergen. Pčelina (1980, 1983) defined Agardhfjellet Formation and Rurikfjellet Horizon within the Janusfjellet Formation.

E.S. Eršova

JANUSFJELLET SUBGROUP

M. Jurassic to E. Cretaceous

(Parker 1967)

Named from a mountain in Nordenskiöld Land, Spitsbergen.

Spitsbergen. The unit rests unconformably with a sharp boundary on the Kapp Toscana Formation

(Tumlingodden Horizon, Pčelina 1983) and is conformably or slightly unconformably overlain by the Helvetiafjellet Formation. It consists of dark, often bituminous, argillites with siltstone and sandstone interbeds and carbonate concretions. The thickness is 550 to 590 m. Ammonites, bivalves, ichthyofauna, and other fossils occur. The subgroup correlates with the Aucella Shales (Hagerman 1925). It is subdivided into the Agardhfjellet and Rurikfjellet formations. On Sørkapp Land it is correlated with the the Ingebrigtsenbukta, Tirolarpasset and Ullabertget series (Różycki 1959). Birkenmajer (1975) reduced its rank to a formation.

D.V.Semevskij

JOHNSENBERGET MEMBER

E. Cretaceous

(Smith et al. 1976)

Named from a mountain on Kongsøya, Kong Karls Land.

Eastern Kongsøya. The boundaries are not described. The unit rests above the deposits of the Kongsøya Formation. It consists of sandstones, rare interbeds of conglomerates. Lava flows are observed. Plant remains occur. The thickness is 30 m (50 m together with basalts). The unit is coeval with the Kükenthalfjellet and Hårfagrehaugen members and forms part of the Kong Karls Land Formation.

E.S. Eršova

JOTUNFONNA BEDS

M. Carboniferous

(Cutbill & Challinor 1965)

Named from a glacier west of Billefjorden, Spitsbergen.

Billefjorden area. On Dickson Land the unit represents the entire Moscovian Stage. It rests conformably on the Anservika Beds and is conformably overlain by the Black Crag Beds. It forms part of the Minkinfjellet Member (Kapitol Member as described) of the Nordenskiöldbreen Formation and consists of limestones. The top is identified by the appearance of the *Waeringella usvae* fusulinid zone. The thickness is up to 50 m.

B.P.Gavrilov

JURA-BASISKONGLOMERAT

Jurassic

(Frebold 1928)

See Brentskardhaugen Member.

D.V.Semevskij

K

KAOSFJELLET MEMBER

E. Triassic

(Buchan et al. 1965)

Named from a mountain in Oscar II Land, Spitsbergen.

Upper member of the Sticky Keep Formation with laminated shales and siltstones. The member is traceable only in the sections north of Wedel-Jarlsberg Land, Spitsbergen. It is 76 m thick in the type section. The term is not used.

D.V.Semevskij

KAPITOL MEMBER

Lt. Carboniferous

(Cutbill & Challinor 1965)

Named from a mountain at the east coast of Ekmanfjorden, Spitsbergen.

Dickson- and Ekmanfjorden areas, Spitsbergen. The lower boundary is unknown. The unit is conformably overlain by the Early Permian deposits of the Tyrrellfjellet Member. It forms part of the Nordenskiöldbreen Formation and is subdivided into the Jotunfonna, Gerritbreen and Matthewbreen members. It is coeval with the Cadellfjellet Member and consists of limestones. The thickness is up to 100 m.

B.P.Gavrilov

KAPP DUNER FORMATION

E. Permian

(Krasil'shnikov & Livšic 1974)

Named from a point on the west coast of Bjørnøya.

Bjørnøya. The unit conformably overlies the Late Carboniferous Kapp Hanna Formation. Overlying deposits

are missing. It consists of dolomites, sporadic limestones. Brachiopods and foraminifers occur. The exposed thickness is 75 m, according to Worsley & Edwards (1976) 50 m.

B.P.Gavrilov

KAPP FANSHAWE FORMATION

Carboniferous to E. Permian

(Nordenskiöld 1863)

Named from a point at Lomfjorden (Ny Friesland Peninsula).

The unit consists of sandstones and limestones. It correlates with the Billenfjorden and Gipsdalen Groups. The term is not used.

D.V.Semevskij

KAPP HANNA FORMATION

Lt. Carboniferous

(Krasil'shikov & Livšic 1974)

Named from a point at the west coast of Bjørnøya.

Bjørnøya. The unit rests conformably on the Middle Carboniferous Kobbekbukta Formation and is conformably overlain by the Early Permian Kapp Duner Formation. It consists of rhythmically alternating quartzitic and calcareous sandstones, conglomerates and thin-platy dolomites. It has originally been thought that the basal cherty conglomerates with lenses and interbeds of calcareous sandstones and limestones rest at the base of the section. Worsley & Edwards (1976) interpreted the conglomerates to be intraformational deposits of the underlying Kobbekbukta Formation. The thickness is up to 150 m (according to Worsley & Edwards, 1976, up to 100 m). Brachiopods and foraminifers occur.

B.P.Gavrilov, D.V.Semevskij

KAPP KJELDSSEN DIVISION

E. Devonian

(Føyn & Heintz 1943)

Dickson Land and southern Andree Land, Spitsbergen. It correlates with the Kapp Kjeldsen Formation (Murašov & Mokin 1976). According to Friend et al. (1966) it correlates with the *Gigantaspis* Zone of the lower part of the Wood Bay Formation. Ichthyofauna occurs.

D.V.Semevskij

KAPP KJELDSSEN FORMATION

E. Devonian

(Friend 1961)

Named from a point in Haakon VII Land, Spitsbergen.

Andree Land and Dickson Land, Spitsbergen. The unit rests conformably on the Ben Nevis Formation and is conformably overlain by the Devonian Keltiefjellet Formation. It consists of alternating red siltstones, argillites and sandstones, the latter westward increasing in volume (Austfjorden Sandstone). The thickness is up to 1500 m. Ichthyofauna, ostracods and plant fossils occur. The unit forms part of the Wood Bay Series. It was first recognized as a fossil division by Føyn & Heintz (1943). Friend et al. (1966) rejected the subdivision of the Wood Bay Series into formations. According to these authors it correlates with the *Gigantaspis* Zone. Murašov & Mokin (1976) again raised it to formation rank.

L.G.Murašov, D.V.Semevskij

KAPP KOBURG MEMBER

Lt. Triassic to E. Jurassic

(Worsley & Heintz 1977)

Named from a point on Kongsøya, Kong Karls Land.

Kongsøya. The unit consists of coastal marine clay deposits grading up-section into siltstones and sandstones containing reptile bones. The thickness exceeds 35 m. The unit forms part of the Svenskøya Formation. According to Pčelina (1980) it correlates with the Bjørnbogen Formation. Based on palynology the deposits are assigned to the Rhaetian-Lias. The authors considered the member to be of Rhaetian age.

M.V.Korčinskaja

KAPP KÅRE FORMATION

M. Carboniferous

(Worsley & Edwards 1976, Gjelberg & Steel 1979)

Named from a point on the southwestern coast Bjørnøya.

Bjørnøya. The unit conformably overlies the Middle Carboniferous Landnørdingsvika Formation and is

conformably overlain by the Late Carboniferous Kapp Hanna Formation. Kirkemo (1979) is subdivided into three members (ascending order): The Bøgevika Member consisting of alternating sandstones, shales and limestones (95 m), the Eflugvika Member predominantly consisting of cherty limestones (70 m), and the Kobbekbukta Member containing alternating limestones and intraformational conglomerates (up to 45 m). The entire thickness is 210 m. Brachiopods and pelecypods occur. The formation generally correlates with the Kobbekbukta Formation though it shows a more detailed subdivision.

D.V.Semevskij

KAPP LEVIN MEMBER
(Worsley & Edwards 1976)

Lt. Devonian to E. Carboniferous

Named from a synonymous point on the east coast of Bjørnøya.

Bjørnøya. This is the middle of the three members of the Røedvika Formation incorporated into the Ursa Sandstone. It rests conformably on the Famennian Vesalstranda Member and is conformably overlain by the Tournasian Tunheim Member. The unit was first defined by Horn & Orvin (1928) as the middle subformation of the Røedvika Formation (Devonian). It is composed of quartz sandstones with argillite and conglomerate lenses and interbeds. Argillites are observed in the upper part of the section. Plant fossils occur. The thickness is 80 m (according to other data up to 100 m).

D.V.Semevskij

KAPP LEVIN SUBFORMATION *
(Pavlov & Evdokimova 1983)

U. Devonian to Lt. Carboniferous

Named from a point at the east coast of Bjørnøya.

Bjørnøya. This is the middle of the five subformations of the Røedvika Formation, which forms part of the Ursa Sandstone. The unit rests conformably on deposits of the Misery Subformation and is conformably overlain by the Tunheim Subformation. It consists of sandstones. The lower part of the section contains interbeds of argillites while the upper part shows lenses of siltstones and argillites. A conglomerate interbed has been observed. Plant fossils occur. The thickness is 125 m. Worsley & Edwards (1970) recognized the Kapp Levin Member.

D.V.Semevskij

* added to the translation by the author

KAPP LYELL BEDS
(Semevskij 1967)

Pleistocene

Named from a point at Bellsund, Spitsbergen.

Svalbard. The unit is reported from central Spitsbergen. It rests on the Pleistocene Bellsund beds and is unconformably overlain by Holocene deposits. It consists predominantly of clays, containing boulders and pebbles. The thickness is up to 8 m in the type section. Marine molluscs occur.

D.V.Semevskij

KAPP STAROSTIN FORMATION
(Cutbill & Challinor 1965)

Permian

Named from a point at the south coast of Isfjorden, Spitsbergen.

Svalbard. The unit forms part of the Tempelfjorden Series. It is subdivided into the Vøringen, Svenskeegga and Hovtinden Members. It rests conformably on the Gipshuken Formation (central Spitsbergen) or lies with erosively on older rocks and is transgressively overlain by Early Triassic rocks. The lower part of the section contains light grey limestones. Upwards there are dark, thick laminated, often nearly massive siliceous rocks. Brachiopods occur. The thickness is up to 460 m. In southern Spitsbergen the formation is coeval with the Tokrossøya Formation. Burov et al. (1965) subdivided these deposits into the Starostin (major part) and Selander formations. According to Norwegian authors, this subdivision is not necessary. Nathorst (1910) called these strata "Productive Beds" and "Spirifer Limestones", and Forbes et al. (1958) "Brachiopod Cherts".

B.P.Gavrilov, D.V.Semevskij

KAPP TOSCANA FORMATION
(Buchan et al. 1965)

Lt. Triassic

Named from a point at Van Keulenfjorden.

Svalbard. The unit is underlain by the Botneheia Formation and with an erosive unconformity overlain by the Jurassic Janusfjellet Formation ("Lias conglomerates"). It is composed of essentially non-marine deposits; greenish-grey sandstones alternating with silty argillites, clay and carbonate siltstones. The succession shows lateral changes. In western-type sections sandstones predominate, while in eastern-type sections two members are recognized, a lower marine shale member (Tschermafjellet) and an upper, non-marine arenaceous member (De Geerdalen). Rare bivalves and plant fossils occur. The thickness in section is 200 m, while the overall thickness may reach 410 m. Flood et al. (1971) and Harland et al. (1974) raised the formation to series rank, the members to formations. Pčelina (1980) distinguished the Hahnfjella and Isfjorden formations and the Bjørnbogen Horizon, together representing the Kapp Toscana Formation.

M.V.Korčinskaja

KAPP TOSCANA GROUP

Lt. Triassic

(Flood et al. 1971)

Named from a point at south coast of Van Keulenfjorden, Spitsbergen.

This unit was recognized by Buchan et al. (1965) as a formation. Flood et al. (1971) raised it to the rank of a series for Barentsøya and Edgeøya. Harland et al. (1974) applied this scheme to Spitsbergen, as well. The Tschermafjellet and De Geerdalen members, previously recognized by Buchan et al. (1965), were raised member rank. Lock et al. (1978) recognized the Edgeøya and Negerfjellet Formations as part of the group on Edgeøya. Mørk et al. (1982) include the Austjøkelen, Tschermafjellet, De Geerdalen, Wilhelmøya and Skuld Formations into the Kapp Kapp Toscana Group. The term is not used in Pčelina's (1980) scheme.

D.V.Semevskij

KAPP ZIEHEN FORMATION

Lt. Permian

(Lock et al. 1978)

Named from a point on northeastern Barentsøya.

Barentsøya and Edgeøya. The lower boundary is not known. The unit is overlain by the Early Triassic Barentsøya Formation, according to Lock et al. (1978), or the Vardebukta Formation, according to Flood et al. (1971). It consists of glauconite sandstones (lower part), limestones and cherty limestones. The thickness is up to 75 m. Klubov (1965) assigned these deposits to the Selander Formation. Lock et al. (1978) consider them to be coeval with lateral transition to the Hovtinden Member of the Kapp Starostin Formation, not being younger than Ufimian. Brachiopods and bivalves occur.

D.V.Semevskij

KARENTOPPEN MEMBER

M. Triassic

(Mørk et al. 1982)

Named from a mountain in Sørkapp Land, Spitsbergen.

Sørkapp Land. This is an intermediate member between the Passhatten and Somovbreen Members of the Bravaisberget Formation. It rests on the Passhatten Member with a sharp boundary and is conformably overlain by the Somovbreen Member. Sandstones are interbedded with conglomerates. The thickness of the type section is 43 m.

D.V.Semevskij

KEILHAUFJELLET FORMATION

Lt. Triassic

(Pčelina 1980)

Named from a mountain in Sørkapp Land, Spitsbergen.

Sørkapp Land. The unit forms part of the Bjørnbogen Horizon. It is coeval with the Tvillingodden (according to Pčelina 1980, 1983), Bjørnbogen and Flatsdalen formations. It rests erosively on the Late Triassic Hahnfjella or Isfjorden Formation. It is unconformably overlain by the Jurassic Sørkapp Formation. The unit contains sandstones, gritstone lenses, sandy-sideritic and rarely phosphate concretions. The thickness is 25 to 30 m. Bivalves, echinoderms and reptile bones occur. According to Mørk et al. (1982) it correlates with the Wilhelmøya Formation, except for the Brentskardhaugen Member.

T.M.Pčelina

KELTIEFJELLET FORMATION

E. Devonian

(Friend 1961)

Named from Keltiefjellet, a mountain in Andree Land, Spitsbergen.

Andree Land, Dickson Land, Spitsbergen. The unit rests conformably on the Devonian Kapp Kjeldsen Formation and is conformably overlain by the Devonian Stjørdalen Formation. It contains alternating red siltstones and sandstones. Interbeds of greenish-grey sandstones rarely occur. The amount of sandstones increases southeastward. The thickness is 600 to 900 m. Ichthyofauna, ostracods and algae are present. The unit forms part of the Wood Bay Series. It was first defined as a fossil zone (division) by Føyn & Heintz (1943). Friend et al. (1966) rejected the subdivision of the Wood Bay Series into formations. Murašov & Mokin (1976) again raised it to formation rank.

L.G.Murašov, D.V.Semevskij

KIAERFJELLET BEDS

E. Permian

(Cutbill & Challinor 1965)

Named from a mountain in Oskar II Land, Spitsbergen.

West coast of Spitsbergen (except for St. Jonsfjorden). It occurs within the upper part of the Tyrrellfjellet Member. It is coeval with "Limestone B" in central Spitsbergen, being a good marker unit. Thinly laminated, soft dolomites. The thickness is 96 m.

B.P.Gavrilov

KIKUTODDEN MEMBER

E. Cretaceous

(Pčelina 1983)

Named from a cape at the southeastern coast of Sørkapp Land, Spitsbergen.

Southern Spitsbergen. It belongs to the lower part of the Helvetiafjellet Formation, consisting of sandstones, interbedded with siltstones. Carboniferous plant remains occur, occasionally with clayey, coaly laminae. The thickness is 40 m.

T.M.Pčelina

KISTEFJELLET FORMATION

E. Triassic

(Mørk et al. 1982)

Named from a mountain in Sørkapp Land, Spitsbergen.

Sørkapp Land. The unit lies unconformably on pre-Paleozoic, metamorphic rocks and is conformably overlain by the Middle Triassic Bravaisberget Formation. It contains shales, often laminated, with sandstones interbeds. The thickness is up to 38 m. Ammonites, bivalves and brachiopods occur. On western Spitsbergen, it correlates with the upper part of the Vardebukta Formation and the Tvillingodden Formation. On eastern Spitsbergen, it correlates with the upper part of the Delatadalen Member and the Sticky Keep Member of the Barentsøya Formation, on Bjørnøya with the Urd Formation. Mørk dated it as Late Induan to (?) Early Anisian.

D.V.Semevskij

KISTEFJELLET MEMBER

E. Triassic

(Pčelina 1983)

Named from a mountain in Sørkapp Land.

Sørkapp Land. This member rests with an angular and stratigraphical unconformity on the Late Rhiphean shales, and is conformably overlain by the Olenekian deposits. It is composed of silty sandstones containing pebbles of metamorphic rocks. Interbeds of mica schists and quartz sandstones are observed. The thickness is 16 m. Late Induan brachiopods occur. The unit forms part of the Kistefjellet Formation.

T.M.Pčelina

KLOTEN BRECCIA MEMBER

E. Permian

(Cutbill & Challinor 1965)

West coast of Spitsbergen and Ny Friesland. The unit transgressively rests on the Carboniferous deposits of the Nordenskiöldbreen and Reinodden formations. It forms part of the lower Gipshuken Formation of the Gipsdalen Series, being coeval with the Harbardbreen Member and the Lower Gypsum Zone. It consists of calcareous and dolomitic breccias. The thickness is up to 90 m.

B.P.Gavrilov

KNORRINGFJELLET MEMBER

Lt. Triassic to M. Jurassic

(Mørk et al. 1982)

Named from a mountain in eastern Nordenskiöld Land, Spitsbergen.

The unit was defined in northwestern Spitsbergen where it represents the Wilhelmøya Formation (Mørk 1982). It consists of shales, sandstones and dolomites. At the base and top of the section there is a thin bed of polymict conglomerate. The thickness is 20 m in the type section.

M.V.Korčinskaja

KOBBEBUKTA FORMATION

M. Carboniferous

(Krasil'shikov & Livšic 1974)

Named from a bay at the southeastern coast of Bjørnøya.

Bjørnøya. The unit conformably overlies Middle Carboniferous deposits of the Landnørdingsvika Formation and is conformably overlain (occasionally with an erosive contact) by the Late Carboniferous Kapp Hanna Formation. It is subdivided into two subformations. The lower one, 70 to 150 m thick, is mainly represented by limestones, subordinate sandstones and shales. The upper one, 40 to 100 m thick, contains limestones and abundant interbeds and lenses of cherty rocks. The thickness of the formation is 160 to 190 m. Worsley & Edwards (1976) described it in more detail under the name of Kapp Kåre Formation. Kirkemo (1979) divided it into three members; Bøgevik Member (correlated with the lower subformation of the Kobbekbukta Formation), Efuglvika Member and Kobbekbukta Member (correlated with the upper subformation). A subdivision into three members seems reasonable, the upper one being the Kapp Kåre Member.

B.P.Gavrilov, D.V.Semevskij

KOBBEBUKTA MEMBER

M. Carboniferous

(Kirkemo 1979)

Named from a bay at the north coast of Bjørnøya.

Bjørnøya. This is the upper member within the Kapp Kåre Formation (Worsley & Edwards 1976). It contains alternated limestones and intraformational conglomerates composed of carbonate and cherty pebbles. The thickness is up to 56 m. On the whole, it is equivalent to the upper part of the upper member of the Kobbekbukta Formation. Due to the conventional priorities it seems appropriate to call it Kapp Kåre Member, restricting the name "Kobbekbukta" for the entire formation.

D.V.Semevskij

KOLTHOFFBERGET MEMBER

Paleocene

(Steel et al. 1981)

Named from a mountain at Van Keulenfjorden, Spitsbergen.

Southern and southwestern Spitsbergen Trough. The unit forms part of the Firkanten Formation (Barentsburg Formation, Livšic 1967). It rests conformably on the Todalen Member of the Todalen Formation and is conformably overlain by the Basilika Formation (Colesbukta Formation, Livšic 1967), laterally replaced by the Endalen Member. It contains deltaic deposits. There are rhythmically alternating sequences, 10 m thick, each starting with dark shales and terminating with poorly sorted, fossiliferous sandstones. The thickness is up to 100 m.

D.V.Semevskij

KONG KARLS LAND FORMATION

E. Cretaceous

(Smith et al. 1976)

Named from an archipelago.

Kong Karls Land. The unit rests on different members of the Kongsøya Formation. The upper boundary is not known. It contains alternating sandstones and lavas. There are two coal seams near the top. Plant remains occur. The thickness is up to 65 m. The unit embraces three sandstone members, laterally grading into each other, i.e. the Kükenthalfjellet, Hårfagrehaugen and Johnsenberget members. It correlates with the Helvetiafjellet Formation (Parker 1967), being part of the Adventdalen Group.

E.S.Eršova, D.V.Semevskij

KONGRESSFJELLET SUBGROUP
(Buchan et al. 1965)

M. to Lt. Triassic

Named from a mountain in Dickson Land, Spitsbergen.

It groups the Botneheia and Sticky Keep formations. The term is not used.
D.V.Semevskij

KONGSFJORDEN FORMATION
(Livšic 1973)

Oligocene

Named from a fiord, Spitsbergen.

Kongsfjorden coast, Spitsbergen. It rests unconformably upon Paleozoic rocks and is disconformably overlain by the Paleogene deposits of the Ny Ålesund Formation. The lower, up to 40 m thick part (according to Orvin, 1934, the lower coal-bearing horizon) is composed of rhythmically alternating siltstones, argillites and coals (three coal seams, each up to 3–4 m thick). The upper part consists of polymict sandstones. The top of the succession represents a coal-bearing unit (3–4 m) with two coal seams. The thickness is 120 m. Plant remains occur.

D.V.Semevskij

KONGSØYA FORMATION
(Smith et al. 1976)

Lt. Jurassic to E. Cretaceous

Named from an island on Kong Karls Land.

Kong Karls Land. The relation to the underlying Svenskøya Formation is obscure. It is erosively overlain by the deposits of the Kong Karls Land Formation. It contains argillites, claystones and limestones. The thickness exceeds 200 m. Ammonites, bivalves and belemnites occur. Within the formation, the Dunerfjellet (Svenskøya), Passet, Retziusfjellet, Tordenskjoldberget (western Svenskøya) and Nordaustpynten (eastern Kongsøya) members are distinguished. According to Birkenmajer (1975) and Parker (1967), the Kongsøya Formation correlates with the Janusfjellet Formation (Subgroup).

E.S.Eršova

KONUSSEN FORMATION
(Pčelina 1983)

E. Cretaceous

Named from a mountain at the south coast of Sassenfjorden, Spitsbergen.

Central and southern Spitsbergen. The unit rests on deposits of the Agardhfjellet Formation with a sharp boundary and is overlain by the Sylodden Formation. It contains mudstones and siltstones. At the base of the section in the Sassenfjorden a 7 m thick unit of glauconitic/carbonate-bearing claystones with calcitic nodules. Algae, ammonites and bivalves occur. The thickness is 140 to 350 m. It correlates with the coeval deposits of the Rurikfjellet Formation (Series). The unit forms part of the Rurikfjellet Horizon (Pčelina 1983).

T.M.Pčelina

KROKODILLEN FORMATION
(Livšic 1967)

Eocene

Named from a mountain on Prins Karls Forland.

Prins Karls Forland. The unit rests conformably upon the Eocene deposits of the Reinhardpynten Formation and is unconformably overlain by the Oligocene Marshaislaguna Formation. It contains thick argillaceous units, minor siltstones, rhythmically alternating with dense sandstones. The thickness attains 100 m.

D.V.Semevskij

KÜKENTHALFJELLET MEMBER
(Smith et al. 1976)

E. Cretaceous

Named from a mountain on Svenskøya, Kong Karls Land.

Svenskøya. The Kükenthalfjellet Member rests on the deposits of the Dunerfjellet Member. The relationships between these two units, however, are obscure. The upper boundary is not known. The unit contains a sandstone succession with varying sandy grain size and compaction, interbedded with mudstones. There are two coal-bearing beds near the top, one of them about 1 m thick. One or two lava flows occur. Plant remains are present. The thickness is 50 m. The unit is coeval with the Hårfagrehaugen and Johnsenberget members of Kong Karls Land and forms part of the Kong Karl Land Formation.

E.S.Eršova, D.V.Semevskij

KVALVÅGEN FORMATION

E. Cretaceous

(Pčelina 1983)

Named from a bay in the southeastern Spitsbergen coast.

Southern Spitsbergen. The unit rests conformably on the Singerfjellet Formation. It is overlain by Paleogene deposits with a stratigraphical unconformity. It consists of siltstones with units of arenaceous siltstones and sandstones, sporadic argillites. Large, horizontally laminated terrigene-carbonate nodules and ammonites occur. The unit correlates with the upper part of the Ditrupa Shale Series, the upper Innkjegla Member and the Langstakken, Zillerberget and Schönrockfjellet members. The thickness is 125 to 550 m.

T.M.Pčelina

L

LAKSVATNET FORMATION

Lt. Permian

(Krasil'shikov & Livšic 1974)

Named from a synonymous lake on northern Bjørnøya.

Bjørnøya. The Laksvatnet Formation rests with an erosive, angular unconformity upon older Phanerozoic deposits, unconformably overlain by Triassic deposits of the Urd Formation. Rocks are limestones, siltstones and sandstones. The thickness is 90 m. Brachiopods and pelecypods occur.

D.V.Semevskij

LANDNØRDINGS(VIKA) FORMATION

Lt. Carboniferous

(Krasil'shikov & Livšic 1974)

Named from a synonymous bay on Bjørnøya.

Bjørnøya. It rests unconformably on Early Carboniferous deposits of the Nordkapp Formation and is conformably overlain by the Middle Carboniferous Kobbekbukta Formation. Red siltstones, sandstones and subordinate limestones occur. In the lower part of the sections conglomerates occur. The thickness ranges from 50 m in the north to 220 m in the south. Pelecypods and foraminifers occur.

B.P.Gavrilov

LANGSTAKKEN MEMBER

E. Cretaceous

(Parker 1967)

Named from a mountain in Nordenskiöld Land.

Spitsbergen. The unit forms part of the Carolinefjellet Formation. It was first defined as the Upper Lamina Sandstone (Hagerman 1925). It rests conformably on deposits of the Innkjegla Member and is conformably overlain by deposits of the Zillerberget Member. The unit contains alternating sandstones, siltstones and argillites. Bivalves, rare ammonites and vermiform burrows occur. The thickness is 40 to 208 m (type section). According to Pčelina (1983) it correlates with the middle part of the Kvalvågen Formation.

E.S.Eršova

LIAS CONGLOMERATE

Jurassic

(Orvin 1940)

See Brentskardhaugen Member.

D.V.Semevskij

LILLJEBORGFJELLET CONGLOMERATES

Lt. Silurian to E. Devonian

(Gee & Moody-Stuart 1966)

Lower lithological unit within the Siktefjellet Series. Equivalent of the Lilljeborgfjellet Formation.

D.V.Semevskij

LILLJEBORGFJELLET FORMATION

Lt. Silurian to E. Devonian

(Murašov & Mokin 1976)

Named from Lilljeborgfjellet, a mountain in Haakon VII Land, Spitsbergen.

Liefdefjorden area, Spitsbergen. The unit overlies the deposits of the Late Proterozoic Signehamna Formation with an angular unconformity and is conformably overlain by the Devonian Siktefjellet Formation.

It consists of polymict conglomerates. The thickness is up to 400 m. It belongs to the Siktelfjellet Group. The unit was defined by Gee & Moody-Stuart (1966) as Lilljeborgfjellet Member.

L.G.Murašov

LINDSTROEMI HORIZON
(Frebold 1931)

M. Triassic

Named from an explorer.

West coast of Spitsbergen and Sørkapp Land. The unit is stratigraphically overlying the *Hymenoceras* Horizon and is overlain by an argillite/sandstone succession. It contains dense limestones and flaggy, fine-grained sandstones. Abundant vermiform burrows and ammonites occur. The thickness is not known. It was previously referred to as Late Triassic and correlated with the Myophoria Sandstone from Bjørnøya. According to Korčinskaja (1982), it is assigned to the *Nathorstites mcconnelli* Zone of Ladinian age, and, according to Mørk et al. (1982), to the Somovbreen Member. Pčelina (1983) grouped it with the Van Keulenfjorden Formation.

M.V.Korčinskaja

LINDSTROEMI SANDSTONE
See Lindstroemi Horizon.

M.V.Korčinskaja

LINGULA SANDSTEIN
(Stolley 1911)

Lt. Triassic

Named from a distinctive fauna.

Spitsbergen. Sandstones, stratigraphically overlying the Nathorstites Niveau. They correlate with the Myophoria Sandstein of Bjørnøya. The strata contain *Lingula polaris* Lundgren. They form part of the Hahnfjella Formation (Pčelina 1983), or the De Geerdalen Formation (Mørk et al. 1982).

M.V.Korčinskaja

LIMESTONE "A" MEMBER
(Forbes et al. 1958)

E. Permian

The lower member of the Brachiopod Chert Succession. It correlates with the Vøringen Member of the Kapp Starostin Formation.

D.V.Semevskij

LIMESTONE "B" LAYERS
(Gee et al. 1953)

E. Permian

Central Spitsbergen. The unit forms uppermost part of the Wordiekammen Formation, and part of the Tyrrellfjellet Member of the Nordenskiöldbreen Formation. It is coeval with the Kiaerfjellet Beds. It consists of dense, micritic, cliff-forming limestones. The thickness is 40 m.

B.P.Gavrilov

LIOPLAX LAYERS
(Nathorst, 1897)

E. Cretaceous

Named from a distinctive fauna.

Festningen section, Isfjorden, Spitsbergen. The unit forms part of the so-called "Sandstone Series". It overlies fossiliferous, shaly sandstones resting above the Elatides Layers. It is overlain by shaley sandstones resting below the Pityophyllum Layers. Rocks are light, fresh sandstones containing molluscs. The thickness is 0.5 m.

D.V.Semevskij

LOWER ARGILLITE FORMATION
(Livšic 1965)

Paleocene

The unit was defined in the northern part of the Spitsbergen Trough. Its thickness is up to 145 m. It correlates with the Colesbukta Formation.

D.V.Semevskij

LOWER COAL-BEARING SANDSTONE FORMATION

Paleocene

(Ljutkevič 1937)

The unit was defined south of Isfjorden, Spitsbergen. The thickness is 150 to 200 m. It correlates with the Barentsburg Formation.

D.V.Semevskij

LOWER COAL-BEARING SERIES

Miocene

(Nathorst 1910)

Spitsbergen Trough. The minimum thickness is measured to be 150 m by the author. It correlates with the Barentsburg Formation.

D.V.Semevskij

LOWER DARK SHALE FORMATION

Paleocene

(Ljutkevič 1937)

The unit was defined south of Isfjorden, Spitsbergen. The thickness is 60 to 150 m. It correlates with the Colesbukta Formation.

D.V.Semevskij

LOWER DARK SHALE SERIES

Paleocene

(Nathorst 1910)

The unit was recognized in the northern part of the Spitsbergen Trough. The minimum thickness is 150 m. It correlates with the Colesbukta Formation. The author suggests a Miocene age.

D.V.Semevskij

LOWER DOLOMITE MEMBER

Permian

(Bates & Schwarzacher 1958)

Between Ekman- and Dicksonfjorden, Spitsbergen. The unit forms part of the Evaporite series. It correlates with the Kiaerfjellet Beds of the Gipshuken Formation of Cutbill & Challinor's (1965) scheme. The thickness is not known.

D.V.Semevskij

LOWER GYPSIFEROUS SERIES

M. Carboniferous

(Gee et al. 1953)

Central Spitsbergen. It is the lower part of the Campbellryggen Group. Gypsum with minor anhydrite, sandstones and limestones occur. The thickness exceeds 300 m. It correlates with the Middle Carboniferous Ebbadalen Formation.

B.P.Gavrilov, D.V.Semevskij

LOWER GYPSUM ZONE

E. Permian

(Cutbill & Challinor 1965)

This is the lower gypsum-anhydritic horizon of the Gipshuken Formation within the Gipsdalen Series. It occurs commonly in the eastern Isfjorden area (Spitsbergen), east of the line Kongsfjorden (head) - Grønfjorden. In the westernmost part it is overlain by the upper gypsum-anhydrite horizon (Upper Gypsum Zone). The thickness is not indicated.

D.V.Semevskij

LOWER LAMINA SANDSTONE (FORMATION)

E. Cretaceous

(Hagerman 1925)

Festningen section, Isfjorden, central Spitsbergen. It overlies the "Shore Sandstone" unit and is overlain by the "Cretaceous Shale" unit. Rocks are thinly laminated, fine-grained, greyish-brown sandstones interbedded with shales. Conglomerates occur at the base of the succession. The thickness is up to 120 m (in the Kjellstrømdalen area). It correlates with the Dalkjegla Member of the Carolinefjellet Formation (Parker 1967). Fossil remains are not described.

D.V.Semevskij

LOWER LIGHT SANDSTONES SERIES

(Orvin, 1940)

Spitsbergen. The thickness is 110 to 130 m. It is equivalent to the Barentsburg Formation.

D.V.Semevskij

LOWER POSIDONIA (POSIDONOMYA) SHALES

E. Triassic

(Spath 1921)

Named from the position in the section and a distinctive fauna.

Central Spitsbergen. South coast of Sassenfjorden, Spitsbergen. This horizon was considered to include deposits containing *Arctoceras* and *Danubites* (= *Xenoceltites*) located immediately above the *Anasibirites* Horizon. Both horizons are within the *Arctoceras* Layers, according to Stolley (1911, 1912). Korčinskaja (1982) assigned it to the *Arctoceras blomstrandii* Zone, Buchan (1965) to the Iskletten Member of the Sticky Keep Formation, Mørk et al. (1982) to the Sticky Keep Member of the Barentsøya Formation, and Pčelina (1983) to the lower part of the Wichebukta Horizon.

M.V.Korčinskaja

LOWER SAURIAN NIVEAU

E. Triassic

(Wiman 1910)

Named from vertebrate fossil remains.

Central Spitsbergen. The unit is reported to contain abundant vertebrate fauna, 93 m above the Fish Niveau and about 115 m below the Upper Saurian Niveau in the Marmierfjellet section on the southern coast of Sassenfjorden, Spitsbergen. It consists of dark grey shales, interbedded with calcareous sandstones and pyritic concretions. The thickness is 5 to 30 m according to different authors. Reptile bones and ammonites occur. According to Korčinskaja (1982) it correlates with the *Arctoceras blomstrandii* Subzone. According to Buchan et al. (1965) it is part of the uppermost Sticky Keep Formation. Mørk et al. (1982) correlates it with the Sticky Keep Member of the Barentsøya Formation, while Pčelina (1983) assigns it to the upper subformation of the Wichebukta Formation.

M.V.Korčinskaja

LOWER TRANSITIONAL FORMATION

Eocene

(Livčic, 1965)

The unit was defined on Nordenskiöld Land. The thickness attains 145 m. It is equivalent of the Hollendardalen Formation.

D.V.Semevskij

LOWEST NODULE BEDS

E. Triassic

(Gregory 1921)

A term given without description to beds of the Triassic succession of southwestern Sassendalen, Spitsbergen.

The beds belong to the lower part of the "Fish-Niveau" section according to Wiman (1910). A description of the fauna of the beds was given by Spath (1921) who indicated an ammonite assemblage with *Anasibirites*, *Keyserlingites* (= *Wasatchites*), *Goniodiscus*, *Arctoceras* and placed the beds beneath the Lower Posidonomya Shales. Later, Frebold (1929) identified these levels as *Goniodiscus nodosus* and *Arctoceras* horizons, respectively. According to Korčinskaja (1970) they belong to the *Wasatchites* Subzone of the *Arctoceras blomstrandii* Zone of the Olenekian stage. According to Buchan et al. (1965) they are part of the Sticky Keep Formation, while Pčelina (1983) includes them into the lower part of the Wichebukta Horizon. Mørk et al. (1982) places them in the lower half of the Sticky Keep Member of the Barentsøya Formation.

M.V.Korčinskaja

LYKTA DIVISION

E. Devonian

(Føyn & Heintz 1943)

Named from a mountain in Dickson Land, Spitsbergen.

Dickson Land, Spitsbergen. It correlates with the Keltiefjellet Formation (Murašov & Mokin 1976). According to Friend et al. (1966), it corresponds to the *Doryaspis nathorsti* Zone of the upper part of the Wood Bay Formation.

L.G.Murašov

LYNGEFJELLET FORMATION

E. Jurassic

(Smith et al. 1975)

Named from a mountain on Hopen.

Hopen. The unit rests upon the hiatal surface of the Late Triassic Flatsalen Formation. The upper boundary is unknown. It contains sandstones interbedded with siltstones. Plant remains occur. The thickness is 80 m. According to Pčelina (1980), it is part of the Tumlingodden Horizon.

T.M.Pčelina

LYNGEFJELLET SANDSTONE FORMATION

E. Jurassic

(Smith et al. 1975)

See Lyngefjellet Formation.

L.G.Murašov

M**MARCHAISLAGUNA FORMATION**

Oligocene

(Livšić 1967)

Named from a lagoon on Prins Karls Forland.

Prins Karls Forland. It rests unconformably upon Eocene deposits of the Krokodillen Formation. No overlying rocks are known. There occur rhythmically alternating sandstones, siltstones, argillites, conglomerates and gritstones. The thickness exceeds 2000 m.

D.V.Semevskij

MARHØGDA BED

M. Jurassic

(Bäckstrøm & Nagy 1985)

Named from a rise at the Sassenfjorden coast, Spitsbergen.

Sassenfjorden and Agardhbukta areas, and probably Festningen section (Spitsbergen). It is grading into the underlying Brennskardhaugen Bed. The unit is overlain by the Middle to Late Jurassic Agardhfjellet Member of the Janusfjellet Formation. It consists of microsparite limestones, partially dolomitized and sideritized, containing quartzite and chert pebbles, carbonate ooides and glauconite. Belemnites occur. The thickness is 0.3 to 1.5 m, 1.5 m in the type section.

D.V.Semevskij

MARIETOPPEN FORMATION

M. to Lt. Devonian

(Friend et al. 1961)

Named from a mountain in the Hornsund area, Spitsbergen.

Southern Spitsbergen. The unit rests with an angular, stratigraphical unconformity on Precambrian deposits. Unconformably (angular and stratigraphical) overlying rocks are the Early Carboniferous argillites of the Adriabukta Formation. The unit is subdivided into three parts, a lower (correlative of the Keltiefjellet Formation), a middle (Stjørdalen Formation) and an upper one (Grey Hoek Series). The lower part of the succession contains alternating red siltstones and sandstones with conglomerate interbeds. The middle part contains siltstones and sandstones. The upper part is dominated by argillites. The thickness is 1000 to 1100 m. Ichthyofauna, pelecypods and plant fossils occur. Birkenmajer (1964) raised its rank to a series.

L.G.Murašov

MARIETOPPEN SERIES

M. to Lt. Devonian

(Birkenmajer 1964)

Equivalent to the Marietoppen Formation.

D.V.Semevskij

MATHEWBREEN BEDS

Lt. Carboniferous

(Cutbill & Challinor 1965)

Named from a glacier in Bünsow Land, Spitsbergen.

Central Spitsbergen, including Ny Friesland. The unit forms part of the Cadelfjellet and Kapitøl members.

It rests conformably on the Late Carboniferous deposits of the Gerritbreen Beds and is conformably overlain by Early Permian deposits of the Tyrrellfjellet Member. It consists of dolomites, calcareous sandstones and limestones. It corresponds to the *Rugosofusulina arctica* fusulinid zone (Sosipatrova 1967). The thickness exceeds 70 m.

B.P.Gavrilov

McVITIE FORMATION

Paleogene

(Atkinson 1963)

Named from a point on Prins Karls Forland.

Forlansundet coasts, primarily on Prins Karls Forland. The maximum thickness is 2500 m. It is currently subdivided into the Sesshøgda, Reinhardpynten, Krokodillen and Marchaislaguna formations, dated as Eocene and Oligocene (Livšic 1967).

D.V.Semevskij

McVITIEPYNTEN FORMATION

Paleogene

(Birkenmajer 1972)

See McVitie Formation.

D.V.Semevskij

MIDDLE SHALE SERIES

Eocene

(Hoel 1929)

Equivalent of the Frysjaodden Formation.

D.V.Semevskij

MIMERBUKTA SANDSTONES

E. to M. Devonian

(Friend 1961)

Named from a bay in Dickson Land, Spitsbergen.

Dickson Land, Spitsbergen. Both contacts are tectonic. The unit consists of red sandstones and siltstones. The thickness is 2000 m. Ichthyofauna, ostracods and rare plant fossils occur. It is equivalent to the Keltiefjellet and Stjørdalen formations. Previously it was referred to as a lithological unit called bed "a" (Nathorst 1910, Stensiö 1918). Friend et al. (1966) considered this succession to be highly deformed in the eastern part of the Wood Bay and Mimervalley formations.

L.G.Murašov

MIMERDALEN SERIES

M. Devonian

(Vogt 1938)

Named from a river valley in Dickson Land, Spitsbergen.

The unit rests unconformably on Devonian deposits of the Wood Bay Series and is overlain by Carboniferous rocks with an angular unconformity. It consists of grey sandstones, siltstones, argillites and coal lenses. The thickness is 540 to 750 m (or up to 1000 m). The unit is subdivided into four formations, the Estheriahaugen, Fiskekløfta, Planteryggen and Plantekløfta formations. Ichthyofauna, pelecypods and plant fossils occur. Vogt dated the sequence as Emsian to Frasnian, Murašov & Mokin (1976) as Emsian to Early Carboniferous (?). Friend (1961) referred to it as the "Mimervalley Series".

L.G.Murašov

MIMERVALLEY FORMATION

(Harland et al. 1974)

Equivalent to the Mimerdalen Series.

D.V.Semevskij

MIMERVALLEY SERIES

E. to M. Devonian

(Friend 1961)

Equivalent to the Mimerdalen Series.

D.V.Semevskij

MINKINFJELLET MEMBER
(Cutbill & Challinor 1965)

M. Carboniferous

Named from a mountain in Bünsow Land, Spitsbergen.

Spitsbergen (except for the Hornsund area). The unit rests conformably on the Carboniferous deposits of the Ebbadalen Formation (or unconformably on the Svenbreen Formation) and is conformably overlain by the Cadellfjellet, Kapitøl or Mørebreen members, respectively (in different parts of Spitsbergen), of the Nordenskiöldbreen Formation, which also incorporates the member in question. The member includes the Carronelvå, Elsabreen, Pyramiden, Anservika and Jotunfonna beds. It consists of dolomites and limestones. In western parts limestones are predominant and grade westward into dolomites, evaporites, and, finally, into coarse-grained deposits. The thickness is up to 400 m. The foraminiferal assemblages III to IV (Sosipatrova 1967) with *Pseudostafella subquadrata*, *Profusulinella chernovi*, *Purawedeniudellina kamensis* and *Fusulinella pulchra* are found. Brachiopods, corals, bivalves and molluscs occur.

B.P.Gavrilov

MISERYFJELLET FORMATION
(Worsley & Edwards 1976)

Lt. Permian

Named from a mountain on eastern Bjørnøya.

Bjørnøya. The unit correlates with the Laksvatnet Formation. According to the authors, its thickness is 115 m.

D.V.Semevskij

MISERY SERIES
(Horn & Orvin 1928)

Lt. Devonian

Equivalent of the maximum 80 m thick coal-bearing part of the Vesalstranda Member (Worsley & Edwards 1976), or with the Misery Subformation (Pavlov & Evdokimova 1983).

D.V.Semevskij

MISERY SUBFORMATION
(Pavlov & Evdokimova 1983)

Lt. Devonian

Named from a mountain (Miseryfjellet) on Bjørnøya.

Bjørnøya. In ascending order, this is the second of five subformations of the Røedvika Formation, forming part of the Ursa Sandstone Series. It rests conformably upon deposits of the Skrekk Subformation and is conformably overlain by rocks of the Kapp Levin Subformation. Siltstones, sandstones, argillites, and up to 20 coal seams, two of them having a workable thickness, and floral remains occur. The thickness is 80 m.

D.V.Semevskij

MOHNHØGDA MEMBER
(Smith et al. 1976)

E. Jurassic

Named from a mountain on Svenskøya, Spitsbergen.

Kong Karls Land. The unit rests conformably on Rhaetian to Lias (?) deposits of the Arnesenodden Bed and is erosively overlain by Jurassic deposits of the Kongsøya Formation. It consists of sandstones interbedded with siltstones and argillites, rarely coals. The upper part of the section contains an interbed of gravel conglomerate. Carbonified wood fragments, pollen-and-spore assemblages of Early Jurassic age occur. The thickness is about 195 m. The unit forms part of the Svenskøya Formation. According to Pčelina (1980) it correlates with the Tumlingodden Formation, according to Mørk et al. (1982) to the upper part of the Wilhelmøya Formation except for the Brentskardhaugen Bed.

E.S.Eršova

MYALINA BEDS
(Tozer & Parker 1968)
See Myalina Shale.

E. Triassic

D.V.Semevskij

MYALINA MARKER HORIZON
(Birkenmajer & Tramme 1977)
See Myalina Shale.
D.V.Semevskij

E. Triassic

MYALINA NIVEAU
(Frebold 1930)
See Myalina Shale.
D.V.Semevskij

E. Triassic

MYALINA PSAMMITIC BEDS
(Buchan et al. 1965)
See Myalina Shale.
D.V.Semevskij

E. Triassic

MYALINA SHALE
(Lundgren 1887)
Named from a distinctive fauna.

E. Triassic

West coast of Spitsbergen. The unit overlies deposits of the *Claraia* Zone. It consists of calcareous sandstones and siltstones. *Myalina de Geeri* Lundgren and *Anodontophora breviformis* Spath occur. According to Frebold (1936), the age is "Eotriassic". It has previously been ascribed to the Permian. Its thickness is 25 to 30 m. Part of the beds contain *Vavilovites spitsbergensis* (Korčinskaja 1976). In Pčelina's (1983) and Mørk's et al. (1982) charts it is included into the Vardebukta Formation.

M.V.Korčinskaja

MYKLEGARDFJELLET BED
(Birkenmajer 1980)

E. Cretaceous

Named from a mountain in Sabine Land, Spitsbergen.

Sabine Land. The unit is situated in the basal part of the Rurikfjellet Member of the Janusfjellet Formation. It is a marker horizon. The unit consists of yellowish-green clays, often plastic, occasionally containing dolomitic concretions. It represents lavas or volcanic tuffs. The thickness is 0.5 to 1 m in the type section. Mudstones interpreted as weathered dolerites were previously reported by Parker (1967) from the base of the Rurikfjellet Formation section.

D.V.Semevskij

MYOPHORIA SANDSTEIN (TEILZONE)
(Anderson 1990)

M. Triassic

Named from a distinctive fauna.

Bjørnøya. These are grey fine-grained flaggy "sandstones" (siltstones), forming the mountain tops Urd and Skuld, rich in ammonites, gastropods, bivalves, brachiopods and echinoderms. The thickness is 20 m. Korčinskaja (1975) assigns it to the *Nathorstites tenuis* Zone. According to Pčelina (1983) it is part of the middle subformation of the Hahnfjella Formation. According to Krasil'sčikov & Livšic (1974) and Mørk et al. (1982) it is part of the Skuld Formation (equivalent of the Tschermakfjellet Formation on Spitsbergen).

M.V.Korčinskaja

MØREBREEN MEMBER
(Cutbill & Challinor 1965)

E. Permian

Named from a glacier on Brøggerhalvøya, Spitsbergen.

Brøggerhalvøya. It rests conformably upon deposits of the Scheteligfjellet Member, the upper boundary being unknown. It forms part of the Nordenskiöldbreen Formation and is coeval with the lower parts of the Kapitol and Cadellfjellet Members. It consists of limestones. The thickness has not been indicated.

D.V.Semevskij

N

NATHORSTITES NIVEAU

Lt. Triassic

(Stolley 1911)

Named from a distinctive fauna.

Spitsbergen. The unit consists of fine shales containing small calcareous concretions. The thickness in the type section is 10 m. It overlies the Daonella Layers and is overlain by non-fossiliferous shales. It is correlated with the upper part of the Myophoria Sandstone on Bjørnøya, where Carnian fauna was described (Mojsisovičs 1886). It is assigned to the *Nathorstites tenuis* Zone of Carnian age (Korčinskaja 1975) in Buchan's et al. (1965) scheme to the Tschermakfjellet Member of the Kapp Toscana Formation, by Mørk et al. (1982) to the Tschermakfjellet Formation, and by Pčelina (1983) to the lower subformation of the Hahnfjella Formation.

M.V.Korčinskaja

NEGERFJELLET FORMATION

Lt. Triassic

(Lock et al. 1978)

Named from a mountain on Edgeøya.

Edgeøya and Barentsøya. The unit conformably overlies the Late Triassic deposits of the Edgeøya Formation. No overlying deposits exist. It consists of sandstones, commonly flaggy, fine-grained and interbedded with siltstones and argillites, occasionally with clay limestone beds and coal intercalations. Bivalves, echinoderms and poorly preserved plant remains occur. The thickness is 400 and 240 mm in the type section and on Barentsøya, respectively. The unit forms part of the Kapp Toscana Group (Series). According to Flood et al. (1971) and Mørk et al. (1982) it correlates with the De Geerdalen Formation, while it is the upper part of the Hahnfjella Formation according to Pčelina (1983).

M.V.Korčinskaja

NORDAUSTPYNTEN MEMBER

Lt. Jurassic

(Smith et al. 1976)

Named from a point on Kongsøya, Kong Karls Land.

Eastern Kongsøya. The boundaries are not described. The unit consists of black shales. Occasionally, they are altered and light red as a result of volcanic activity. The thickness is ranging from 100 to 150 m. Ammonites and bivalves occur. The unit correlates with the middle part of the Dunerfjellet Member. It forms part of the Kongsøya Formation.

E.S.Eršova

NORDENSKIÖLDBREEN FORMATION

M. Carboniferous

(Cutbill & Challinor 1965)

Named from a glacier near Billefjorden, Spitsbergen.

Svalbard. In central Spitsbergen, the unit rests conformably on Bashkirian deposits (Ebbadalen Formation), while in southern Spitsbergen, the lower part of the formation is missing. It is conformably overlain by the Early Permian deposits of the Gipshuken Formation. It consists predominantly of limestones and dolomites. The thickness is up to 900 m. The unit forms part of the Gipsdalen Series and is subdivided into several members, in the Billefjorden area (in ascending order) the Minkinfjellet, Cadellfjellet and Tyrrellfjellet members; in the Nordfjorden area the Minkinfjellet, Kapitøl and Tyrrellfjellet members; in the Brøggerhalvøya area the Scheteligfjellet, Minkinfjellet, Mørebreen and Tyrrellfjellet members. On southern Spitsbergen, the lowermost part of the formation is coeval with the Hymefjellet Formation, the remaining part with the Treskelodden Formation. Foraminiferal assemblages (according to Sosipatrova 1967) with *Pseudostufella subquadrata*, *Profusulinella cherkovi*, *Parawedekiudellina kamensis*, *Fusulinella pulchra*, *Pseudofusulina nana*, *Pseudoschwagerina truncata* have been found. Abundant shallow marine fauna occurs.

B.P.Gavrilov, D.V.Semevskij

NORDENSKIÖLDFJELLET-SCHICHTEN

Oligocene

(Vonderbank 1970)

Named from Nordenskiöldfjellet, Spitsbergen.

Spitsbergen Trough. They represent the final of the four Paleogene sedimentary cycles. They comprise two horizons, in ascending order, interbedded argillites and sandstones and coarse greywackes. The maximum

thickness is 330 m. They are equivalent to the Storvola Formation except for the lowermost argillite unit within the latter.

D.V.Semevskij

NORDKAPP FORMATION

E. Carboniferous

(Cutbill & Challinor 1965)

Named from a point on Bjørnøya.

Bjørnøya. The unit rests conformably on Late Devonian to Early Carboniferous deposits of the Landnørdingsvika Formation. It consists of sandstones, argillites, siltstones, conglomerates and coal (up to 2 m). Horn & Orvin (1928) included these deposits into the upper part of the Ursa Sandstone Unit. The thickness is 110 to 235 m. Plant fossils occur.

B.P.Gavrilov

NY ÅLESUND FORMATION

Oligocene

(Challinor 1967, Livšic 1973)

Named from a settlement on Spitsbergen.

Kongsfjorden coast, Spitsbergen. According to Livšic (1973), it rests unconformably on the Paleogene deposits of the Kongsfjorden Formation. No overlying deposits are known. The unit contains polymict sandstones, rhythmically alternating with fine-pebbly conglomerates and gritstones, as well as minor interbeds of siltstones and argillites. Two coal seams, 0.5 to 3 m thick, and one coal horizon (0.1 m) occur. The thickness exceeds 120 m. Abundant plant fossils occur. Challinor (1967) covers both Livšic's (1973) Kongsfjorden and Ny Ålesund Formations with this name.

D.V.Semevskij

O

OIL SHALE MEMBER

M. Triassic

(Lock et al. 1978)

Edgeøya and Barentsøya. This is the upper cliff-making part of the section. It forms part of the Oil Shale Series (Group). It consists of oil shales, foliated in the upper part of the section, containing septarian horizons, weathered siltstones and thin limestone interbeds. The thickness is 30 to 100 m. The unit is equivalent to the Botneheia Formation or B. Member according to Pčelina (1983) and Mørk (1982), respectively.

M.V.Korčinskaja

OIL SHALE SERIES (GROUP)

E. to M. Triassic

(Falcon 1928)

Edgeøya and Barentsøya. The lower boundary is unknown. The unit is overlain by the Purple (Blue and Purple) Shale Group. It consists of laminated oil shales (argillites, clay siltstones) interbedded with limestones and septarians, more prominent in the upper horizons. Abundant ammonites and bivalves, as well as reptile bones occur. The thickness is 120 m. The part of upper 35 m forms a distinct escarpment. According to Mørk et al. (1982) it is equivalent to the Sticky Keep and Botneheia members of the Barentsøya Formation, according to Pčelina (1983) to the Wichebukta and Botneheia formations.

D.V.Semevskij

OLD RED SANDSTONE

Lt. Silurian to Devonian

(Harland et al. 1974)

Devonian deposits of Spitsbergen. The unit comprises the Siktefjellet, Red Bay and Andree Land groups. At present, it is subdivided into (in ascending order) the Siktefjellet, Red Bay, Wood Bay, Grey Hoek, Wijde Bay and Mimerdalen series. The thickness is 8000 to 8500 m.

D.V.Semevskij

OOZY MOUND BEDS (FORMATION)

M. Triassic

(Gregory 1921)

Named from the composition of the rocks.

Central Spitsbergen. The unit consists of thinly laminated dark shales containing phosphate nodules. It overlies the "Escarpment Shales" and is overlain by the "Upper Nodule Beds". In ascending order, beds with *Pseudomonotis* (= *Meleagrinella*), beds with *Daonella* and beds with *Belemnites* are observed. The thickness is 130 m. According to the adopted schemes, it is the upper part of the Botneheia Formation (Member).

M.V.Korčinskaja

ORSABREEN MEMBER

E. Devonian

(Friend et al. 1966)

Named from a glacier in Andree Land, Spitsbergen.

This is a green sandstone unit in the middle part of the Kapp Kjeldsen Formation. It forms a local marker bed.

L.G.Murašov

ORUSTDALEN FORMATION

E. Carboniferous

(Cutbill & Challinor 1965)

Named from a valley in western Nordenskiöld Land, Spitsbergen.

Western Spitsbergen. The unit forms part of the Billefjorden Series. It rests with a stratigraphical and angular unconformity on pre-Devonian deposits of different age and is conformably overlain by the Early Carboniferous deposits of the Vegard Formation. The unit consists of coarse-grained sandstones, conglomerates, in lateral (southerly) direction argillites and siltstone interbeds. Thin coal seams occur. In the Isfjorden area, the formation is divided into a lower subformation, up to 150 m thick and characterized by conglomerates and gritstones, and an upper subformation, up to 800 m thick and without conglomerates and gritstones. The thickness is up to 1000 m in the Isfjorden area. Flora and miospores occur. The unit is coeval with the Sporehøgda Member of the Sveenbreen Formation.

B.P.Gavrilov, D.V.Semevskij

P

PASSAGE BEDS

M. Carboniferous

(Gee et al. 1952)

Billefjorden area, Spitsbergen. Transitional member between the Lower Gypsiferous Series and the Wordiekammen Limestones, consisting of limestones, sandstones and minor gypsum intercalations. The thickness is up to 300 m. It has previously been regarded as part of the Campbellryggen Group. It correlates with the Minkinfjellet Member of the Nordenskiöldbreen Formation within the Gipsdalen Series (Cutbill & Challinor (1965).

B.P.Gavrilov

PASSAGE UNIT

Lt. Triassic

(Klubov 1965)

Edgeøya and Barentsøya. The unit rests on the "Argillite Unit" and is overlain by the "Sandstone Unit". The thickness is up to 165 m. It was first recognized by Falcon (1928) as the "Purple Shale Group". It correlates with the upper part of the Edgeøya Formation (scheme of Lock et al. 1978) and its correlatives.

D.V.Semevskij

PASSET MEMBER

Lt. Jurassic

(Smith et al. 1976)

Named from a valley on Kongsøya, Kong Karls Land.

Kongsøya. The unit rests above the Sjögrenfjellet Member and is conformably overlain by deposits of the Retziusfjellet Member (both are of a Jurassic age). It consists of unconsolidated clays interbedded with sands and sandstones containing rare ferruginous nodules. The thickness exceeds 65 m. Small belemnites occur. The unit forms part of the Kongsøya Formation and correlates with the lower part of the Dunerfjellet Member. Nathorst (1910) assigned these deposits to the Callovian.

E.S.Eršova

PASSHATTEN MEMBER

M. Triassic

(Birkenmajer 1977)

Named from a nunatak in Torell Land, Spitsbergen.

The unit forms part of the Drevbreen Formation. It rests conformably on deposits of the Early Triassic Sticky Keep Formation and is conformably overlain by deposits of the Ladinian Somovbreen Member. It consists of dark grey to black, often bituminous, shales interbedded with clayey limestones, siltstones and sandstones in the upper and lower parts of the section, respectively. The thickness is ranging from 22 to 220 m (the latter in the type section). Ammonites occur. The unit correlates with the major part of the Botneheia Formation (according to Buchan 1965), Member (Flood et al. 1971) or Horizon (Pčelina 1983). According to Mørk et al. (1982) it is one of the two members of the Bravaisberget Formation correlative of the Botneheia Formation.

D.V.Semevskij

PETRELSKARDET* SHALE FORMATION

M. Carboniferous

(D. Dineley in: Gobbett 1964)

Named from a pass at the west Spitsbergen coast.

West coast of Nordenskiöld Land and Oscar II Land. The unit rests conformably (?) on Early Carboniferous deposits of the Vegard Formation and is overlain by Middle Carboniferous deposits of the Tårnkanten Formation. The unit makes part of the Gipsdalen Series is one of its basal units. It is equivalent to the Ebbadalen Formation in age and facies. It consists of red shales. The thickness is up to 350 m. Foraminifers occur.

B.P.Gavrilov

* The correct spelling of the place name is 'Petrellskaret'. The editor.

PITNERODDEN FORMATION

E. Triassic

(Pčelina 1983)

Named from a point at the south coast of Van Keulenfjorden, Spitsbergen.

Spitsbergen. The unit rests with a sharp boundary on the Induan deposits of the Vardebukta Formation. It is overlain by the Middle Triassic deposits of the Botneheia Horizon, with a hiatus, though conformably. It consists of bituminous shales and carbonate-bearing argillites. Up-section there are massive siltstones with mottled structures, lenses and interbeds of quartzose sandstones. The lower part of the succession correlates with the *Arctoceras blomstrandii* Zone, the upper one with the *Keyserlingites subrobustus* Zone of the Olenikian Stage (Korčinskaja 1982). Ammonoids, bivalves, brachiopods and ichthyofauna occur. The thickness ranges between 24 and 300 m. The unit forms part of the Wichebukta Horizon. It is coeval with the Wichebukta Formation and correlates with the Tvillingodden Formation (Mørk et al. 1982).

T.M.Pčelina

PITYOPHYLLUM-NIVEAU (LAYERS)

E. Cretaceous

(Hoel & Orvin 1937)

Named from a distinctive flora.

Festningen section, Isfjorden, Spitsbergen. The unit forms part of so-called Sandsteinreihe. It overlies siltstones resting upon the Lioplax Layers and is overlain by sandstones lying below the Ginkgo Layers. It consists of dense, brownish sandstones and brown siltstones. Its thickness is 0.15 m. *Pityophyllum starostini* Heer, *Pityophyllum lindstroemi* Nathorst are found.

D.V.Semevskij

PLANTEKLØFTA FORMATION

Lt. Devonian

(Friend 1961)

Named from a ravine in Dickson Land, Spitsbergen.

Dickson Land, Spitsbergen. The unit rests with an angular unconformity on the Devonian deposits of the Planteryggen Formation. No overlying rocks are observed. The unit consists of grey conglomerates interbedded with siltstones and argillites. The thickness is up to 100 m. Plant fossils occur. It has previously been referred to as beds "M" (Stensiö 1918) and "9" (Vogt 1941) of Late Devonian age. The unit forms part of the Mimerdalen Series. Murašov & Mokin (1976) did not exclude an Early Carboniferous age for the formation on the basis of the contained flora.

L.G.Murašov

PLANTERYGGEN FORMATION
(Friend 1961)

Lt. Devonian

Named from a mountain in Dickson Land, Spitsbergen.

Dickson Land. The unit rests conformably on the Late Devonian deposits of the Fiskekløfta Formation and is overlain by the Late Devonian rocks of the Plantekløfta Formation with an angular unconformity. It is composed of multicoloured sandstones, siltstones, argillites and, in the upper part of the succession, red conglomerates. The thickness is up to 400 m. Ichthyofauna(?) and plant fossils occur. Previously it has been reported as beds "j-1" (Stensiö 1918) and beds "8a-c" (Vogt 1941). The unit forms part of the Mimerdalen Series.

L.G.Murašov

PLATEAU FLAGS
(Gregory 1921)

Lt. Triassic

Named from its morphology.

Central Spitsbergen, Adventfjorden to Agardhbukta. The unit contains non-fossiliferous clayey sandstones. It overlies the Upper Nodule Beds. The thickness is 120 m.

M.V.Korčinskaja

POLAKKFJELLET BED
(Birkenmajer 1975)

Lt. Jurassic

Named from a mountain in Torell Land.

Southern Spitsbergen. The unit rests in the lower part of the Tirolpasset Member within the Janusfjellet Formation. It is a marker bed. The unit contains sideritic, orange to yellow sandstones, coarse- to medium-grained, interbedded with thin argillite beds. Sideritic nodules and interbeds of fine conglomerates are observed in the upper part of the succession. The thickness is 5 to 46 m.

E.S.Eršova

POSIDONIA (POSIDONOMYA) LAYERS (ZONE)
(Nathorst 1910)

E. Triassic

Named from a distinctive fauna.

Central Spitsbergen. The unit consists of sandstones and bituminous fossil-rich argillites of 15 to 20 m thickness. The author recognized the *Anasibirites* and *Arctoceras* horizons and abundant *Posidonia mimer* Oeberg, as well as fish remains. According to Korčinskaja (1980) the unit belongs to the *Arctoceras blomstrandii* Zone. Buchan et al.(1965), Mørk et al. (1982) include it into the lower half of the Sticky Keep Formation (Member), Pčelina (1983) into the lower half of the Wichbukta Formation. The age is Olenikian (Smithian).

M.V.Korčinskaja

POSIDONOMYA KALK (LIMESTONE)
(Mojsisovičs 1886)

E. Triassic

Named from a distinctive fauna.

Central Spitsbergen. The unit consists of dark gray oil shales with abundant *Posidonomya mimer* Oeberg. The unit was later identified as Posidonia (Posidonomya) Layers (Nathorst 1940).

M.V.Korčinskaja

PRINCESSE ALICE FORMATION
(Murašov & Mokin 1976)

E. Devonian

Named from a mountain in Haakon VII Land, Spitsbergen.

Liefdefjorden area. The unit rests erosively on the Devonian deposits of the Rabotdalen Formation and is erosively overlain by the Devonian rocks of the Andreebren Formation. It consists of quartz conglomerates with gritstone and coarse-grained sandstone lenses. The thickness is 300 m. The unit forms part of the Red Bay Series.

L.G.Murašov

PRODUCTUS-BEARING LIMESTONES AND CHERTS (GROUP)
PRODUCTUSFÜHRENDE KALK- UND KIESELSCHIEFER
PRODUCTUSFÜHRENDE KIESELGESTEINE
(Nordenskiöld 1871, Nathorst 1910)

Lt. Permian

Named from a distinctive fauna.

Central and northeastern Spitsbergen. It rests on the "Spirifer Limestone" unit and is overlain by Triassic deposits. It is composed of siliceous rocks (spongiolites), limestones, shales and sandstones. Fauna is rare. The maximum thickness is 250 m. The unit correlates with the Svenskeegga and Hovtinden Members of the Kapp Starostin Formation.

D.V.Semevskij

PSEUDOMONOTIS SHALE
(Lundgren 1887)

E. Triassic

Named from a distinctive fauna.

Central Spitsbergen. The unit contains dark shales and limestones. It rests 130 m above the Myalina Niveau and is overlain by limestones with *Retzia*, *Eumorphotis* (*Pseudomonotis*) cf. *multiformis* Buttn. The thickness is 1.5 m. According to Frebold (1936) the age is Eotriassic. The unit has previously been assigned to the Permian. According to Korčinskaja (1980) it belongs to the *Vavilovites spitsbergensis* Zone of the Induan Stage, according to Pčelina (1983) and Mørk et al. (1982) to the Vardebukta Formation.

M.V.Korčinskaja

PTYCHITES BED
(Spath 1921)

E. Triassic

Named from a distinctive fauna.

Central Spitsbergen. In the Sassenfjorden area shales with *Ptychites trochlaeformis* Lindst. and *Ptychites* cf. *tibetanus* Mojs. occur, which were recognized by Gregory (1921) as "Thin-foliated Shales" within the "Escarpment Shales" unit. According to Korčinskaja (1980) they belong to the *Frechites laqueatum* Zone, while they, according to Buchan et al. (1965), form part of the Botneheia Member of the Barentsøya Formation. Pčelina (1983) assigned them to the lower part of the Botneheia Formation.

M.V.Korčinskaja

PURPLE (BLUE AND PURPLE) SHALE GROUP (SERIES)
(Falcon 1928)

Lt. Triassic

Barentsøya and Edgeøya. The unit rests on the Oil Shale Group and is overlain by the Sandstone Group. It is the middle of the Triassic successions on the islands. It consists of multicoloured sandy shales (argillites) with numerous interbeds of "ferruginous limestones" (clayey siderite) and "ferruginous" (clayey-sideritic) nodules. Abundant pelecypods and ammonites occur. The thickness is 75 m. The unit correlates with the Tschermakfjellet Formation (Member) (schemes by Mørk et al. (1982), Buchan et al. (1965), the lower subformation of the Hahnfjella Formation (Pčelina 1983), or the *Nathorstites tenuis* Zone (Korčinskaja 1975) of the Carnian age.

M.V.Korčinskaja

PYRAMIDEN CONGLOMERATE FORMATION
(Ljutkevič 1937)

M. Carboniferous

Named from a mountain near Billefjorden, Spitsbergen.

The unit has also been reported as "red conglomerates." It was defined in the area of the mountain Pyramiden. It consists of coarse-grained to gritty, mainly red, quartzose sandstones with numerous interbeds of gritstones and conglomerates, as well as rare dolomites and argillites. It is thought to rest on the Lower Gypsiferous Series and is overlain by the Wordiekammen Limestones (Forbes et al. 1958), though relationships are not clear. The Pyramiden conglomerates could be a local individual unit, laterally grading into the so-called Transitional Beds, or represent the basal member of the "Passage Beds" (Goe et al. 1952), or be equivalent to the Lower Gypsiferous Series of Bashkirian age (Ebbadalen Formation) (Stensiö 1918, Livšic 1966). According to Cutbill & Challinor (1965) the unit represents beds within the Minkinfjellet Member of the Nordenskiöldbreen Formation.

B.P.Gavrilov, D.V.Semevskij

PYRAMIDEN FORMATION
(Ustrickij 1967)

M. Carboniferous

The term was suggested for a conglomerate unit at the mountain Pyramiden. It correlates with the Pyramiden Conglomerate Formation.

D.V.Semevskij

R

RABOTDALEN FORMATION
(Murašov & Mokin 1976)

E. Devonian

Named from the river valley "Rabotdalen" on Haakon VII Land, Spitsbergen.

Liefdefjorden area, Spitsbergen. The unit rests conformably on Devonian deposits of the Wulfberget Formation and is overlain by Devonian rocks of the Princesse Alice Formation with an erosive boundary. It consists of coarse-grained sandstones with lenses and interbeds of siltstones, argillites, calcareous siltstones. The thickness is up to 200 m. Ostracods and plant fossils occur. The unit forms part of the Red Bay Formation.

L.G.Murašov

RAUDFJORDEN SERIES

See Red Bay Series.

L.G.Murašov

RED BAY CONGLOMERATE
(Friend 1961)

E. Devonian

A maximum 700 m thick conglomerate unit rests at the base of the Red Bay Series. Gee & Moody-Stuart (1966) interpreted it as a unit of marble conglomerates with an overlying, more variegated quartzite conglomerate. It correlates with the Wulfberget, Rabotdalen and Princesse Alice formations.

D.V.Semevskij

RED BAY GROUP
(Friend et al. 1966)

E. Devonian

Equivalent of the Red Bay Series.

D.V.Semevskij

RED BAY SERIES
(Holtedahl 1914)

E. Devonian

Named from Raudfjorden (Red Bay), Spitsbergen.

Northern Spitsbergen. The unit rests with an erosive boundary and angular unconformity(?) on Devonian deposits of the Siktefjellet Series and is conformably overlain by the Devonian Wood Bay Series. It consists of grey and red conglomerates, gritstone, sandstone, siltstone and argillites. It is currently subdivided into six formations, the Wulfberget, Rabotdalen, Princesse Alice, Andreebreen, Fraenkelryggen and Ben Nevis formations (Murašov & Mokin 1976). The thickness is 2300 to 2550 m. Ichthyofauna, pelecypods, ostracods and plant fossils occur. Friend et al. (1966) raised the series to group rank.

L.G.Murašov

RED CONGLOMERATE
(Anderson 1900)

M. Carboniferous

Bjørnøya. It correlates with the Landnørdingsvika Formation.

D.V.Semevskij

REINHARDPYNTEN FORMATION
(Livšic 1967)

Eocene

Named from Reinhardpynten on Prins Karls Forland.

Prins Karls Forland. It rests conformably on the Sesshøgda Formation and is conformably overlain by Eocene deposits of the Krokodillen Formation. Calcareous siltstones are interbedded with sandstones (lower part)

and dense siltstones (upper part). The thickness exceeds 210 m. Pelecypods occur.

D.V.Semevskij

REINODDEN FORMATION

M. Carboniferous to E. Permian

(Orvin 1940, Cutbill & Challinor 1965)

Named from a point south of Bellsund, Spitsbergen.

Wedel Jarlsberg Land, Spitsbergen. It rests unconformably on Early Carboniferous or pre-Devonian deposits and is conformably overlain by the Early Permian deposits of the Gipshuken Formation. The rocks are red conglomerates and sandstones, with limestone intercalations in the east. The formation forms part of the Gipsdalen Series. Its maximum thickness is 200 m. It has previously been dated as Early Permian.

B.P.Gavrilov

RENARDODDEN FORMATION

Oligocene

(Livšic 1973)

Named from a point on the south shore of Bellsund, Spitsbergen.

South shore of Bellsund, Spitsbergen. It rests unconformably upon Paleogene deposits of the Skilvika Formation. No overlying rocks are preserved. The strata consist of regularly alternating quartzose sandstones, argillites and siltstones with coal intercalations. Basal conglomerates occur at the base. The thickness is 300 m. Abundant flora.

D.V.Semevskij

RETZIA LIMESTONE, RETZIAKALK

E. Triassic

(Lundgren 1887, Frebold 1930)

Named from a distinctive fauna.

Western Spitsbergen. The unit rests immediately upon the Pseudomonotis Shale. There is a thin interbed of limestone with *Retzia nathorsti* Lundgren. The thickness is 1.2 m. It has previously been assigned to the Permian. According to Korčinskaja, it belongs to the beds with *Vavilovites**. Pčelina (1983) and Mørk et al. (1982) include it into the Vardebukta Formation.

M.V.Korčinskaja

* *Vavilovites spitsbergensis* Zone. T.M.Pčelina.

RETZIUSFJELLET MEMBER

Lt. Jurassic

(Smith et al. 1976)

Named from a mountain on Kongsøya, Kong Karls Land.

Kongsøya. The unit rests conformably on the Passet Member showing a sharp boundary and is overlain by Early Cretaceous deposits of the Tordenskjoldberget Formation. The rocks are dark shales with calcareous nodules. The thickness exceeds 75 m. Ammonites, bivalves and belemnites occur. It correlates with the coeval part of the Dunerfjellet and Nordaustpynten members, upper part of the Rurikfjellet Formation. The unit forms part of the Kongsøya Formation.

E.S.Eršova

REUTERSKIÖLDFJELLET SANDSTONES

E. Devonian

(Friend 1961)

Named from Reuterskiöldfjellet in Dickson Land, Spitsbergen.

Dickson Land, Spitsbergen. Both contacts are tectonic. The rocks are grey sandstones, siltstones and argillites. The thickness is up to 2000 m. Ichthyofauna occur. It correlates with the Kapp Kjeldsen Formation. The unit has previously been identified as "b-e" beds (Stensiö 1918). Friend et al. (1966) consider it to be part of the Austfjorden Sandstone Member.

L.G.Murašov

RIFLEODDEN CONGLOMERATE

E. Carboniferous

(Worsley & Edwards 1976)

Bjørnøya. This is a conglomerate interbed in the lower part of the Tunheim Member (Subformation) within the Røedvika Formation. It contains pink quartzites. The thickness is 3 to 5 m.

D.V.Semevskij

RURIKFJELLET FORMATION

E. Cretaceous

(Parker 1967)

Named from a mountain in Heer Land, Spitsbergen.

Svalbard. It rests conformably on the Jurassic deposits of the Agardhfjellet Formation and is conformably or slightly unconformably overlain by the Cretaceous deposits of the Helvetiafjellet Formation. It consists of Argillites and clayey siltstones with abundant organic carbonate nodules. In Agardhbukta a member of light glauconitic/sideritic clays, up to 8 m thick, is resting at the base of the formation. The thickness in the central Spitsbergen is 110 to 180 m, in eastern areas 300 to 365 m. In the type section the thickness is 176 m. Ammonites and bivalves occur. Faunal zones and beds according to Eršova (Pčelina 1983) are: Berriasian zones: *Piasanites rjasanensis*, *Surites spasakensis*, and beds: *Buchia volgensis*, *Buchia okensis*, *Tollia* sp., *Bojarenius* sp.; Valanginian zones: *Temnoptychites syzraniensis*, *Polyptychites ramulicosta*, *Dichotomites bidichiformis*; Hauterivian zones: *Spectoniceras versicolor* and *Simbirskites decheni*. Parker (1967) included the formation into the Janusfjellet subgroup Birkenmajer (1975) into the Janusfjellet Formation as a member, subsequently (1980) identifying the Myklegardfjellet Bed at the base of the member in the Agardhbukta area. Pčelina (1983) raised the formation to series rank and subsequently, besides the Konussen and Sylodden formations, into the Rurikfjellet Horizon. The Tirolarpasset and Ullaberget series (members; Birkenmajer 1975) recognized by Różycki (1959) are correlated with the Rurikfjellet Formation.

E.S.Eršova, D.V.Semevskij

RURIKFJELLET HORIZON

E. Cretaceous

(Pčelina 1983)

Named from a mountain in Heer Land, Spitsbergen.

It comprises the Rurikfjellet Sries, Konussen and Sylodden formations. In general it is equivalent to the Rurikfjellat Formation.

T.M.Pčelina

RURIKFJELLET MEMBER

E. Cretaceous

(Birkenmajer 1975)

Named from a mountain in Heer Land, Spitsbergen.

The unit was defined in central Spitsbergen. In the Sørkapp Land area it is correlated with the Ullaberget Member and the upper part of the Tirolarpasset Member. It forms part of the Rurikfjellet Formation (Parker 1967), but it is dated by the author as Valanginian to Hauterivian. It is separated from the Agardhfjellet Member by a Late Volgian to Berriasian hiatus. The Myklegardfjellet Bed, 0.5 to 1 m thick, forms its base.

D.V.Semevskij

RURIKFJELLET SERIES

E. Cretaceous

(Pčelina 1983)

Named from a mountain in Heer Land.

The unit occurs mostly in the Van Keulenfjorden, Hornsund, Agardhbukta, Oppdalen and Kjelistrømdalen areas. It correlates with the Rurikfjellet Formation.

T.M.Pčelina

RØEDVIKA FORMATION

Lt. Devonian to E. Carboniferous

(Horn & Orvin 1928)

Named from a bay on Bjørnøya.

The unit forms part of the Ursa Sandstone Series. Horn & Orvin (1928) suggested a Devonian age and subdivided the formation into three subformations. Worsley & Edwards (1976) distinguished three members, in ascending order, the Vesalstranda, Kapp Levin and Tunheim members. Pavlov and Evdokimova (1983) divided it into five subformations, the Skrekk, Misery, Kapp Levin, Tunheim and Fugle subformations. Siedlecka (1975) dated the formation as Carboniferous. The unit rests unconformably or tectonically on Precambrian deposits and is overlain by the Carboniferous deposits of the Nordkapp Formation with an erosive boundary. It consists of quartzitic sandstones, argillites, siltstones and conglomerates. Coal interbeds, including some of workable thickness, are observed. Ichthyofauna and plant fossils occur. The thickness is up to 360 m (according to other data up to 450 m) and decreases southward.

D.V.Semevskij

S

SANDSTEINREIHE

E. Cretaceous

(Nathorst 1910)

Festningen section, Isfjorden, Spitsbergen. It correlates with the Shore Sandstone. Within the series the Elatides, Lioplax (Stüßwasserschichten mit Lioplax), Pityophyllum (Hoel and Orvin 1937), and Ginkgo Layers occur.

D.V.Semevskij

SANDSTONE GROUP

Lt. Triassic

(Falcon 1928)

Edgeøya and Barentsøya. It rests on the Purple Shales Group. The upper boundary is unknown. The rocks are thin-flaggy sandstones interbedded with sandy shales. Plant remains, sporadic ammonites and reptile bones occur. The thickness is 240 to 400 m. It correlates with the De Geerdalen Formation (Member) according to the scheme by Mørk et al. (1982) and Buchan et al. (1965), the upper subformation of the Hahnfjella Formation (Pčelina 1983), the Negerfjellet Formation (Lock et al. 1978).

D.V.Semevskij

SANDSTONE UNIT

Lt. Triassic

(Klubov 1965)

Edgeøya and Barentsøya. the unit rests on the Transitional Beds. The maximum thickness is 300 m. It was first defined by Falcon (1928) as the Sandstone Group. It correlates with the Negerfjellet Formation (scheme by Lock et al. 1978) and its equivalents.

D.V.Semevskij

SARKOFAGEN FORMATION

Paleocene

(Major & Nagy 1972)

Named from a mountain at the south coast of Isfjorden, Spitsbergen.

Nordenskiöld Land and Nothorst Land. The thickness is 280 m. It correlates in general with the Grumant and Hollendardalen formations.

D.V.Semevskij

SARSBUKTA FORMATION

Paleogene

(Birkenmajer 1972)

See Sars Formation.

D.V.Semevskij

SARS FORMATION

Paleogene

(Atkinson 1963)

Named from a bay in Forlandsundet, Spitsbergen.

East shore of Forlandsundet. The boundaries are not indicated. The unit consists of regularly alternating conglomerates, gritstones, sandstones, siltstones and/or argillites. Plant remains occur. The thickness attains 300 m. Livšic (1967) assigned the deposits to the Sesshøgda Formation.

D.V.Semevskij

SASSENDALLEN GROUP (SERIES)

Lt. to M. Triassic

(Buchan et al. 1965)

Named from a valley on Spitsbergen.

The group comprised the Vardebukta, Sticky Keep and Botneheia formations. The latter two formations were included into the Kongressfjellet Subgroup. In most areas it rests on the Late Permian Kapp Starostin Formation with a hidden unconformity, but with a marked unconformity on the Hecla Hook basement in Sørkapp Land. It is conformably overlain by the Kapp Toscana Formation. According to Mørk et al. (1982) the group comprises the Urd (Bjømøya), Kistefjellet, Tvillingodden, Vardebukta and Bravaisberget (west coast of Spitsbergen) and Barentsøya (eastern Svalbard) Formations. According to Pčelina (1983) the group comprises formations and members of the Vardebukta, Wichdebukta and Botneheia horizons. The thickness of the group lies between 65

(Bjørnøya) and 700 m.
M.V.Korčinskaja

SAURIAN BED
(Spath 1921)

E. Triassic

Named from a vertebrate fauna.

Southern coast Sassenfjorden, Spitsbergen. It correlates in general with the Lower Saurian Niveau (Wiman 1910).

M.V.Korčinskaja

SCHETELIGFJELLET MEMBER

M. Carboniferous

(Gobbett 1964, Cutbill & Challinor 1965)

Named from a mountain on Brøggerhalvøya, Spitsbergen.

Brøggerhalvøya. The unit is coeval with most of the Minkinfjellet Member. It forms part of the Nordenskiöldbreen Formation resting on Bashkirian deposits of the Brøggertinden Formation and being overlain by the Jotunfonna Beds (or Mørebreen Member) of the Nordenskiöldbreen Formation. It is composed of limestones, dolomites and calcareous sandstones. Basal conglomerates are 5 to 10 m thick. The thickness of the member is over 150 m.

B.P.Gavrilov

SCHÖNFOCKFJELLET MEMBER

E. Cretaceous

(Nagy 1970)

Named from a mountain in Nordenskiöld Land, Spitsbergen.

Spitsbergen. The unit forms part of the Carolinefjellet Formation. It rests conformably on the Zillerberget Member and is unconformably, with a stratigraphical hiatus, overlain by the Paleogene deposits of the Barentsburg Formation. It consists of sandstones, argillites and siltstones. Bivalves and crinoid fragments occur. The thickness is 83 m. In Pčelina's (1983) scheme it correlates with the lowermost Kvalvågen Formation.

E.S.Eršova

SELANDER FORMATION

Lt. Permian

(Burov et al. 1965)

Named from a point on Nordaustlandet.

Svalbard. The unit forms part of the Tempelfjorden Series. It rests conformably on the Permian Kapp Starostin Formation and is conformably (with a hidden unconformity) overlain by Early Triassic deposits. It consists of glauconitic sandstones and light green limestones. Brachiopods occur. The thickness is between 30 and 300 m. Norwegian authors that include it into the Kapp Starostin Formation, are disputing individual occurrence of the formation.

B.P.Gavrilov

SELMANESET MEMBER

E. Triassic

(Buchan et al. 1965)

Named from a point in Isfjorden, Spitsbergen.

Western Spitsbergen. This is the lower member of the Vardebukta Formation. It consists of calcareous shales and siltstones. It becomes more sandy up-section, and fine-grained sandstones, clayey limestones and ferruginous nodules appear. The thickness is 136 m in the type section. It comprises the Myalina Shales (Lundgren, 1887) and the Claraia Zone (Frebold 1936), and, according to Korčinskaja (1986), the *Otoceras boreale* Zone.

M.V.Korčinskaja

SELVÅGEN FORMATION

Eocene

(Livšic 1967)

Named from a bay on Prins Karls Forland.

Shores of Forlandsundet. It rests unconformably on the erosion surface of various Late Proterozoic deposits and is overlain by the Eocene Sesshøgda Formation. Predominant lithologies are multicoloured conglomerates, regularly alternating with siltstones, argillites and, occasionally, sandstones and gritstones. The thickness is between 130 m on the western shore and over 1000 m on the eastern shore of the strait. The conglomeratic

Selvågen Formation had previously been recognized by Atkinson (1963).
D.V.Semevskij

SERGEJEVFIJELLET BEDS
(Siedlecki & Turnau 1964)

E. Carboniferous

Equivalent to the Sergejevfjellet Formation.
D.V.Semevskij

SERGEJEVFIJELLET FORMATION

E. Carboniferous

(Cutbill & Challinor 1965; Siedlecki & Turnau 1964)

Named from a mountain on southern Spitsbergen.

Southern Spitsbergen. The unit forms part of the Billefjorden Series. It is coeval with the Hultberget Member of the Svenbreen Formation and the Vegard Formation. It conformably overlies Early Carboniferous deposits of the Hornsundneset Formation and is erosively overlain by Triassic deposits. The rocks are shales, fine-grained sandstones, one to two coal beds up to 1 m thick. The thickness near Sergejevfjellet is up to 260 m, decreasing eastward. East of Hornsund it is completely eroded. Miospores occur. Siedlecki and Turnau (1964) called the unit Sergejevfjellet Beds.

B.P.Gavrilov, D.V.Semevskij

SESSHØGDA FORMATION

Eocene

(Livsic 1967)

Named from a mountain on Prince Karl Forland.

Forlandsundet coast. The unit rests conformably on the Selvågen Formation and is conformably overlain by the Eocene Reinhardpynten Formation. It represents rhythmically alternating interbeds of conglomerates and gritstones, sandstones, argillites and siltstones. The thickness is ranging between 110 m on the west coast and over 300 m on the east coast. Abundant flora and pelecypods occur.

D.V.Semevskij

SHALE-ALTERNATED GREENISH-GREY SANDSTONE FORMATION

Eocene

(Kotlukov 1936)

The unit was recognized in the Barentsburg area, Spitsbergen. The thickness is 100 m. It correlates with the Hollendardalen Formation. Paleocene age had previously been suggested.

D.V.Semevskij

SHALY GREEN SANDSTONE FORMATION

Eocene

(Ljutkevič 1937)

The unit was recognized at the southern coast of Isfjorden, Spitsbergen. The maximum thickness is 400 m. It correlates with the Hollendardallen Formation.

D.V.Semevskij

SHORE SANDSTONE (FORMATION)

E. Cretaceous

(Hagerman 1925)

Named from its location.

Festningen section, Isfjorden. Spitsbergen. The unit overlies the Festning Sandstone and is overlain by the Lower Lamina Sandstones. It consists of sandstone and siltstone succession, tuff interbeds. Plant remains occur. The thickness is up to 60 m. The unit correlates with the Glimrefjellet Member of the Helvetiafjellet Formation (Parker 1967), the upper part of the Helvetiafjellet Formation (Pčelina 1983), and the Continental Series (Różycki 1959).

D.V.Semevskij

SIKSAKEN MEMBER

E. Triassic

(Buchan et al. 1965)

Named from a mountain in Oscar II Land, Spitsbergen.

Western Spitsbergen. This is the upper member of the Vardebukta Formation. It consists of dark grey, often calcareous shales and siltstones, limestones and sandstones. Thickness in the type section is 104 m. The unit

comprises "Shales with *Pseudomonotis*" (Lundgren 1887) and "Limestones with *Hustedia (Retzia)*" (Nathorst 1910).

M.V.Korčinskaja

SIKTEFJELLET FORMATION

E. Devonian

(Murašov & Mokin 1976)

Named from Siktefjellet in Haakon VII Land, Spitsbergen.

Liefdefjorden area, Spitsbergen. The unit rests conformably on the Devonian deposits of the Lilljeborgfjellet Formation, and is overlain with an erosive and angular unconformity by Devonian deposits of the Wulfberget Formation. It consists of sandstones. The thickness is 350 m (from earlier data 1400 m). Flora occur. The unit forms part of the Siktefjellet Series. Gee & Moody-Stuart (1966) distinguished it as an individual member.

L.G.Murašov

SIKTEFJELLET GROUP

Lt. Silurian to E. Devonian

(Gee & Moody-Stuart 1966)

Equivalent to the Siktefjellet Series.

D.V.Semevskij

SIKTEFJELLET SANDSTONES

E. Devonian

(Gee & Moody-Stuart 1966)

This is the upper lithological unit of the Siktefjellet Series. It correlates with the Siktefjellet Formation.

D.V.Semevskij

SIKTEFJELLET SERIES

Lt. Silurian to E. Devonian

(Murašov & Mokin 1976)

Named from Siktefjellet on the north coast of Liefdefjorden, Spitsbergen.

Liefdefjorden area. The unit rests with an angular unconformity on Precambrian deposits and is overlain with erosion and angular unconformity by the Devonian Red Bay Series. It consists of conglomerates, sandstones and rare interbeds of argillites. It is subdivided into two formations: Lilljeborgfjellet and Siktefjellet. The thickness is up to 750 m (from earlier data 1500 to 1800 m). Rare Early Devonian plant remains occur. Gee (1972) dated the unit to be of Early Downtonian (Late Silurian) age. The deposition of the formation is separated from Gedinnian sedimentation by the Haakonian phase of folding. Murašov & Mokin (1976) dated the unit to be of Gedinnian age. However, the great thickness, break in sedimentation and Early Devonian flora rather suggest Pridolian to Gedinnian age. Gee and Moody-Stuart (1966) previously considered the formation as a group (1966).

L.G.Murašov, D.V.Semevskij

SINGERFJELLET FORMATION

E. Cretaceous

(Pčelina 1983)

Named from a mountain on the east coast of Spitsbergen.

Southern, partially eastern Spitsbergen. The unit rests conformably on the Dalkjegla Formation and is conformably overlain by the Kvalvågen Formation. It represents a monotonous succession of dark shaly and silty/shaly rocks containing beds with abundant organic carbonate nodules as marker beds. Ammonites, bivalves, foraminifers and algae occur. The thickness is 210 to 230 m. It forms part of the Singerfjellet Horizon and is coeval with the Ymerbukta Formation. The unit correlates with the middle part of the Ditrupa Shale Series (Różycki 1959) and the lower part of the Innkjegla Member of the Carolinefjellet Formation (Parker 1967). According to E.S.Eršova, *Tropalum arcticum* beds (Late Aptian) and the *Laymeriella turdefurcata* Zone (Early Albian) have been observed.

T.M.Pčelina, D.V.Semevskij

SINGERFJELLET HORIZON

E. Cretaceous

(Pčelina 1983)

Named from a mountain on the east coast of Spitsbergen.

Spitsbergen. The unit rests conformably on the Dalkjegla Formation and is conformably overlain by the Kvalvågen Formation. It comprises the Singerfjellet and Ymerbukta Formations. It correlates with the middle part of the Ditrupa Shale Series (Różycki 1959) and the lower part of the Innkjegla Member of the

Carolinenfjellet Formation (Parker 1967).

D.V.Semevskij

SJÖGRENFJELLET MEMBER

E. Jurassic

(Smith et al. 1976)

Named from a mountain on Kongsøya, Kong Karls Land.

Kong Karls Land. The unit conformably overlies Triassic deposits of the Kapp Koburg Member and is overlain with erosion by Jurassic deposits of the Kongsøya Formation. The unit contains poorly lithified sands with interbeds of sandstones, pebbles, clays and coaly intercalations. Pollen-and-spore assemblages are Rhaetian to Lias in age. The thickness exceeds 130 m. The unit forms part of the Svenskøya Formation. According to Pčelina (1980) it correlates with the Tumlingodden Formation. In the scheme of Mørk et al. (1982) it correlates with the lower Wilhelmøya Formation except for the Brentskardhaugen Bed.

E.S.Eršova, M.V.Korčinskaja

SKAMDALEN SUBFORMATION

M. Devonian

(Murašov & Mokin 1976)

Named from a valley on Andree Land, Spitsbergen.

The unit consists of grey siliceous siltstones, interbeds of argillites and limestone lenses. The thickness is 150 m. It forms part of the Gjelsvikfjellet Formation (Upper Subformation). Ichtyofauna occurs.

L.G.Murašov

SKILISEN BED

E. Triassic

(Mørk et al. 1982)

Named from a glacier in Torell Land, Spitsbergen.

Western Spitsbergen. The unit forms part of the Tvillingodden Formation. It consists of sandy bioclastic limestones. The thickness is 10 to 12 m. *Hustedella nathorsti* (previously determined as *Retzia nathorsti*) occurs. There are also massive crinoidal biosparite banks between Bellsund and Sørkapp.

D.V.Semevskij

SKILISEN RETZIA LIMESTONE BED

E. Triassic

(Birkenmajer 1977)

Named from a glacier in Torell Land, Spitsbergen.

Southern Spitsbergen. The unit forms part of the Wiberbreen Member of the Vardebukta Formation. It consists of fine-crystalline, locally sandy, commonly bituminous limestones grading into coquina beds filled with bivalves and brachiopod shells. *Retzia nathorsti* Lundgren occurs. The thickness is 4 to 5 m. The age is Upper Induan (Upper Dinerian).

D.V.Semevskij

SKILVIKA FORMATION

Oligocene

(Livšic 1973)

Named from a bay at the south coast of Bellsund, Spitsbergen.

Southern coast of Bellsund, Spitsbergen. The unit rests unconformably on the erosion surface of Precambrian rocks and is unconformably overlain by the Paleogene Renardodden Formation. It consists of alternating argillites, siltstones and sandstones with thin coal seams. At the base a 4.5 m thick basal conglomerate horizon occurs. The thickness exceeds 110 m. Abundant plant fossils occur.

D.V.Semevskij

SKJOLDKOLLEN MEMBER

E. Devonian

(Friend et al. 1966)

Named from a hill on Reinsdyrflya, Woodfjordenarea, Spitsbergen.

Reinsdyrflya peninsula, Spitsbergen. It is a maximum 40 m thick, locally observed member in the middle part of the Keltiefjellet Formation containing up to 5 m thick interbeds of green limestone.

L.G.Murašov, D.V.Semevskij

SKREKK SUBFORMATION

Lt. Devonian

(Pavlov & Evdokimova 1983)

Named from a escarpment (Skrekkjuvet) on Miseryfjellet, Bjørnøya.

Bjørnøya. This is the upper of five subformations of the Røedvika Formation incorporated into the Ursa Sandstone Unit. It rests with an erosional or with tectonic contact on Precambrian deposits and is conformably overlain by the deposits of the Misery Subformation. Quartzitic sandstones are interbedded with siltstones and argillites. At the base there are conglomerates (3 to 5 m). The thickness is 170 m. Ichthyofauna occurs.

D.V.Semevskij

SKULD FORMATION

Lt. Triassic

(Krasil'shikov & Livšic 1974)

Named from a top of Miseryfjellet, Bjørnøya.

Bjørnøya. The unit rests with an erosive boundary on deposits of the Urd Formation (Verdande Bed). The upper boundary is unknown. In the lower part of the succession there are shales with sideritic nodules. In the upper part of the section there are laminated siltstones. The thickness is 140 m. Ammonites and bivalves occur. The unit correlates with the lower part of the Kapp Toscana Group.

D.V.Semevskij

SMALEGGGA MEMBER

Lt. Triassic to M. Jurassic

(Mørk et al. 1982)

Named from a mountain in Sørkapp Land, Spitsbergen.

The unit forms part of the Wilhelmøya Formation (Mørk 1982) on Sørkapp Land, where it represents the entire formation. Lithologies are quartzitic sandstones, underlain and overlain by polymict, often phosphatic conglomerates. The thickness is 28 m in the type section.

D.V.Semevskij

SOFT BLACK SHALE FORMATION

Eocene

(Kotlukov 1936)

The unit was recognized in the Barentsburg area, Spitsbergen. The thickness is 200 to 250 m. It correlates with the Frysjaodden Formation.

D.V.Semevskij

SOMOVREEN MEMBER

M. Triassic

(Birkenmajer 1977)

Named from a glacier in Torell Land, Spitsbergen.

Southern Spitsbergen. The unit forms part of the Drevbreen Formation. It rests conformably on the Anisian Passhatten Member and is conformably overlain by the Carnian Tschermakfjellet Member. It consists of dense siltstones grading into calcitic siltstones and sandy limestones. The thickness is between 8 to 100 m (in the type section). Ammonites, bivalves and reptile bones occur. The unit correlates with the upper part of the Botneheia Formation (according to Buchan et al. 1965), Member (according to Flood et al. 1971) or Horizon (according to Pčelina 1983). According to Mørk et al. (1982) it is one of two members within the Bravaisberget Formation.

D.V.Semevskij

SPIRIFERKALK (SPIRIFER LIMESTONE)

Permian

(Anderson 1900)

Bjørnøya. Equivalent to the Laksvatnet Formation. See also "Spiriferkalken".

D.V.Semevskij

SPIRIFERKALKEN (SPIRIFER LIMESTONE)

E. Permian

(Nordenskiöld 1871; Nathorst 1910)

Named from a distinctive fauna.

Spitsbergen. The unit rests on the Cyathophyllum Limestones and is overlain by the Productus-Bearing Limestones. The thickness attains 40 m. It correlates with the "Limestone A" member within the Brachiopod Chert Group according to the scheme of Forbes et al. (1958). Cutbill & Challinor (1965) correlated it with the Vøringen Member of the Kapp Starostin Formation.

See also Spiriferkalk.
D.V.Semevskij

SPOREHØGDA MEMBER
(Cutbill & Challinor 1965)

E. Carboniferous

Named from a mountain on central Spitsbergen.

Central Spitsbergen, including the Ny Friesland peninsula. The unit forms part of the Svenbreen Formation (lower member). It rests with an erosive contact on Early Carboniferous deposits of the Hørbyebeen Formation and is conformably overlain by the Early Carboniferous Hultberget Member. East of Dickson Land the subformation rests directly on Precambrian deposits. Massive, coarse-grained sandstones with interbeds of shales and coals, and conglomerates at the base occur in eastern areas. The thickness is up to 80 m. This is the upper part of the microfloral *Aurita* Zone (Serpukhovian).

B.P.Gavrilov, D.V.Semevskij

STAROSTIN FORMATION
(Burov et al. 1965)

Permian

Named from a point at Isfjorden, Spitsbergen.

Svalbard and Bjørnøya. The unit rests conformably on Early Permian deposits of the Gipshuken Formation and is conformably overlain by Late Permian deposits of the Selander Formation (or transgressively overlain by Early Triassic deposits). It forms part of the Tempelfjorden Series. In the upper part of the section there are fossiliferous limestones (Spirifer Limestones). Up-section there are siliceous, clayey-siliceous or calcareous to siliceous rocks. The bulk of limestones increases east- and southward. Brachiopods occur. According to Sosipatrova (1967), the formation comprises beds containing foraminifers: *Nodosaria longa*, *Gerkeina komiensis*, *Fronicularia bujkurica* (assemblages X-XII). The thickness attains 400 m, decreasing north- and eastward within the central trough. It is equivalent of the bulk of the Vøringen and Svenskøya members within the Kapp Starostin Formation. Norwegian authors have been debating its individual occurrences.

B.P.Gavrilov, D.V.Semevskij

STICKY KEEP FORMATION
(Buchan et al. 1965)

E. Triassic

Named from a mountain in the Sassenfjorden area, Spitsbergen.

At present the unit is regarded as the middle member of the Barentsøya Formation. It was defined as part of the Kongressfjellet Subgroup of the Sassendalen Group. It is subdivided into the Iskletten (lower) and Kaosfjellet (upper) subformations of Olenekian age (Korčinskaja 1982).

M.V.Korčinskaja

STICKY KEEP MEMBER
(Flood et al. 1971)

E. Triassic

Named from a mountain in the Sassenfjorden area, Spitsbergen.

Central and eastern Svalbard (eastern type of the section). The unit forms part of the Barentsøya Formation (Mørk 1982). It has previously been recognized as an individual formation and was subdivided into the Iskletten (lower) and Kaosfjellet subformations (Buchan et al. 1965). It is coeval with the Tvillingodden Formation (western type of the section) and the upper part of the Kistefjellet Formation (Sørkapp Land area) (Mørk 1982). The unit rests conformably on the Induan Deltadalen Member and is conformably overlain by the Anisian deposits of the Botneheia Member. It consists of shales interbedded with siltstones up-section increasing in volume. Abundant calcareous concretions, bivalves, ammonites, fish and reptile remains occur. The thickness in the type section is 124 m, while the overall thickness is up to 310 m.

D.V.Semevskij

STJØRDALEN DIVISION
(Føyn & Heintz 1943)

E. Devonian

Andree Land, Spitsbergen. The bulk of the division is correlative of the Stjørdalen Formation (Murašov & Mokin 1976). According to Friend et al. (1960) it is not of individual significance. Ichthyofauna occurs.

D.V.Semevskij

STJØRDALEN FORMATION

E. Devonian

(Friend 1961)

Named from the valley Stjørdalen, Spitsbergen.

Andree Land, Spitsbergen. The unit conformably overlies the Keltiefjellet Formation of Devonian age and is conformably overlain by the Devonian Gjelsvikfjellet Formation. It consists of siltstones and argillites of grape colour. The thickness is 400 m. The unit is attenuating in southerly direction and missing in Dickson Land. Ichtyofauna occurs. It is part of the Wood Bay Series. It was first recognized as a faunal division by Føyn & Heintz (1943). Friend et al. (1966) rejected the subdivision of the Wood Bay Series into formations. Murašov & Mokin (1976) raised it to formation rank.

L.G.Murašov, D.V.Semevskij

STORBREEN SUBGROUP

E. to M. Triassic

(Birkenmajer 1977)

Named from a glacier in Torell Land, Spitsbergen.

Southern Spitsbergen. The unit comprises the Sticky Keep and Devbreen formations. It rests conformably on Early Triassic deposits of the Vardebukta Formation and is usually overlain with a stratigraphical hiatus by the Late Triassic De Geerdalen Formation. There are two rock groups: clayey, often bituminous shales and dense, calcitized siltstones grading into sandy limestones. Both are often bituminous. The entire unit is marine. The thickness is between 165 and 470 m. It is correlative of the Kongressfjellet Subgroup and the Tschermakfjellet Member of the Kapp Toscana Formation (Buchan et al. 1965), the Kongressfjellet and Tschermakfjellet formations (Flood 1971), Wichebukta and Botneheia horizons and the lower member of the Hahnfjella Formation, according to Pčelina (1983).

D.V.Semevskij

STORVOLA FORMATION

Oligocene

(Livšic 1967)

Named from a mountain at the northeastern coast of Van Keulenfjorden, Spitsbergen.

Spitsbergen Trough. It rests conformably upon the Collinderodden Formation. Overlying rocks are missing. Polymictic sandstones alternate with argillites and thinly laminated siltstones. 0.1 to 0.2 m thick coal seams occur throughout the section. The thickness exceeds 700 m. Abundant flora and pelecypods occur. It was previously recognized as the "Upper Coalbearing Series" (Narhorst 1910), "Upper Coal-Bearing Sandstone Formation" (Ljutkevič 1937) and "Upper Plant-Bearing Sandstone Series" (Orvin 1940). Major & Nagy (1972) applied the name Aspelintoppen Formation to the same stratigraphical interval.

D.V.Semevskij

SÜSSWASSERSCHICHTEN MIT LIOPLAX

E. Cretaceous

(Hoel & Orvin 1937)

See Lioplax Layers.

D.V.Semevskij

SVENBREEN FORMATION

E. Carboniferous

(Cutbill & Challinor 1965)

Named from a glacier in central Spitsbergen.

Central Spitsbergen, including the Ny Friesland peninsula. The unit forms part of the Billefjorden Series and is subdivided into the Sporehøgda and Hultberget members. It rests with an erosive boundary on sandstones and coaly deposits of the Hørbyebreen Formation and is unconformably overlain by Middle Carboniferous deposits of the Ebbadalen Formation. The rocks are coarse sandstones. Their thickness varies between 40 and 225 m. The formation forms the upper part of the microfloral *Aurita* Zone (Serpukhovian).

B.P.Gavrilov, D.V.Semevskij

SVENSKEEGGA MEMBER

Lt. Permian

(Cutbill & Challinor 1965)

Named from a mountain on Spitsbergen.

Central Spitsbergen. The unit also occurs east of Billefjorden, but is there not distinguished from the underlying Vøringen Member. It is conformably overlain by the Late Permian deposits of the Hovindalen Member

of the Kapp Starostin Formation. The unit is part of the Kapp Starostin Formation containing shales, siltstones and limestones with a brachiopod fauna in the upper part of the section. The latter represent a good marker. The thickness is up to 220 m. Forbes et al. (1958) called it the "Lower Brachiopod Cherts".

D.V.Semevskij

SVENSKØYA FORMATION

Lt. Triassic to E. Jurassic

(Smith et al. 1976)

Named from Svenskøya, Kong Karls Land.

Kong Karls Land. Underlying deposits are unknown. The unit is unconformably (?) overlain by Jurassic deposits of the Kongsøya Formation. It is composed of continental, primarily sandy, poorly lithified deposits. Rhaetian(?) - Hettangian-Sinemurian pollen-and-spore assemblages are present. The thickness is between over 165 to over 200 m. From some other data it is 200 to 235 m. On Svenskøya it comprises the Arnesenodden Bed and the Monhøgda Member, on Kongsøya the Kapp Koburg and Schöngrenfjellet members. According to Mørk et al. (1982) it correlates with the Wilhelmøya Formation except for the Brentskardhaugen Bed, according to Pčelina (1983) with the upper part of the Bjørnbogen Horizon and lower part of the Tumlingodden Horizon.

E.S.Eršova, M.V.Korčinskaja

SYLODDEN FORMATION

E. Cretaceous

(Pčelina 1983)

Named from a point at the north coast Isfjorden, Spitsbergen.

Central and southern Spitsbergen. It rests on the Konussen Formation with a sharp boundary and is conformably (southern areas) or with a minor stratigraphical unconformity overlain by the Helvetiafjellet Formation. It consists of irregularly interbedded clayey siltstones and sandstones with carbonate nodules. Ammonites, bivalves, belemnites and algae occur. The thickness is 60 to 115 m. The unit correlates with coeval deposits of the Rurikfjellet Formation (Series) and forms part of the Rurikfjellet Horizon (Pčelina 1983).

T.M.Pčelina

SØRKAPP FORMATION

E. to M. Jurassic

(Pčelina 1980)

Named from Sørkapp Land, Spitsbergen.

Sørkapp Land. The unit rests erosively on Late Triassic deposits of the Keilhaufjellet Formation. It is overlain by Late Jurassic deposits of the Agardhfjellet Formation. It consists of sandstones, sandy siltstones with gritstone lenses and interbeds of phosphoritic concretions. The unit forms part of the Tumlingodden Horizon.

T.M.Pčelina

T

TAGE NILSSON FORMATION

M. Devonian

(Murašov & Mokin 1976)

Named from a synonymous mountain (Tage Nilssonfjellet)* in Andree Land, Spitsbergen.

Equivalent to the Wijde Bay Formation.

L.G.Murašov

* the editor

TAVLEFJELLET FORMATION

M. Devonian

(Murašov & Mokin 1976)

Named from Tavlefjellet in Andree Land, Spitsbergen.

Andree Land, Spitsbergen. The unit rests conformably on the Devonian deposits of the Gjelksvikfjellet Formation and is conformably overlain by the Devonian rocks of the Forkdalen Formation. It contains black, fractured argillites with interbeds of calcareous siltstones grading up-section into silty argillites. Clayey-carbonate nodules occur. The thickness is 300 m. Ichthyofauna and pelecypods are observed. The unit forms part of the Grey Hoek Series.

L.G.Murašov

TAXODIUM SHALE MEMBER
(Heer 1980)

Paleocene

Named from a distinctive flora.

Festningen section (Isfjorden, Spitsbergen). This is a horizon including the lowermost Tertiary deposits of the section. It consists of thinly laminated black, bituminous and coaly argillites. The thickness is less than 1 m. *Taxodium distichum miocenium* Heer, *Sequoia nordenskioldi* Heer, *Libocedrus subiniana* Heer. It belongs to the lower part of the Barentsburg Formation.

D.V.Semevskij

TEISTBERGET FORMATION
(Pčelina 1980)

E. Jurassic

Named from a mountain in the Wichebukta area, Spitsbergen.

Agardhbukta and adjacent areas. The unit rests erosively on Late Triassic (Norian) deposits of the Bjørnbogen Formation; it is overlain by the Brentskardhaugen Member. Two subformations are recognized. Loose sandstones, rich in plant remains, form the lower part of the section; glauconite admixed form the upper one. Dinoflagellates occur. The thickness is 14 to 26 m. The unit is incorporated into the Tumlingodden Horizon together with the Lyngfjellet, Sørkapp and Tumlingodden formations, being coeval with the lower part of the latter.

T.M.Pčelina

TEMPELFJORDEN SERIES (GROUP)
(Cutbill & Challinor 1965)

Permian

Named from a fjord in central Spitsbergen.

Svalbard and Bjørnøya. The unit includes the Kapp Starostin Formation (or Starostin and Selander Formations) (most of the archipelago), the Tokrossøya Formation (Sørkapp Land), and the Laksvanet Formation (Bjørnøya). Limestones with abundant fauna, sandstones and conglomerates form the lower part of the section. Up-section, there are sandy and clayey limestones and shales. The rocks are silicified. Brachiopods, bryozoans and echinoderms occur. The thickness lies between 20 and 460 m.

B.P.Gavrilov, D.V.Semevskij

TERRACE COMPLEX
(Feyling-Hanssen 1955)

Holocene

This is a coastal-marine depositional complex of Svalbard building up terraces up to 60 m above sea level. A detailed description is made from the Billefjorden area. The unit consists of sands, sandy loams, clays and pebbles. Abundant molluscs and cirripeds occur. The overall minimum thickness is 20 m.

D.V.Semevskij

TIROLARPASSET MEMBER
(Birkenmajer 1975)

Lt. Jurassic to E. Cretaceous

Named from a pass in Torell Land, Spitsbergen.

Southern Spitsbergen. The unit unconformably overlies the Jurassic deposits of the Ingebrigtsenbukta Member, and is conformably overlain by the Cretaceous deposits of the Ullaberget Member. It was first recognized as a member by Różycki (1959). It consists of black bituminous argillites with interbeds of dolomites and sideritic nodules. A member of sideritic sandstones (various grain-sizes), 5 to 46 m thick, forms the lower part of the section. Ammonites and bivalves occur. The thickness is 28 to 400 m. The unit is incorporated into the Janusfjellet Formation. It is equivalent of coeval parts of the Agardhfjekket Formation and the Rurikfjellet Horizon (Pčelina 1983).

E.S.Eršova

TIROLARPASSET SERIES
(Różycki 1959)

Lt. Jurassic to E. Cretaceous

Equivalent to the Tirolarpasaset Member.

E.S.Eršova

TODALEN MEMBER

Paleocene

(Steel et al. 1981)

Named from a valley in the Adventdalen area, Spitsbergen.

Spitsbergen Trough. The unit forms part of the Firkanten Formation (Barentsburg Formation, Livšic 1967). It rests unconformably upon Cretaceous deposits and is conformably overlain by the Endalen or Kolthoffberget members of the same formation. It consists of regularly alternating shales, siltstones, sandstones and coals, some of which have a workable thickness, indicate a deltaic origin. The thickness attains up to 60 m.

D.V.Semevskij

TOKROSSØYA FORMATION

Permian

(Siedlecka 1964, 1970)

Named from a island at southern Spitsbergen.

Sørkapp Land, Spitsbergen. The unit forms part of the Tempelfjorden Group. The upper and lower boundaries are unknown. At the base of the section there are limestones, at the top sandstones (originally, a reverse order was suggested). The thickness is over 300 m.

B.P.Gavrilov

TORDENSKJOLDBERGET MEMBER

E. Cretaceous

(Smith et al. 1976)

Named from a mountain on Kongsøya, Kong Karls Land.

Kongsøya. The unit rests upon the Retziusfjellet Member and is erosively overlain by the Early Cretaceous deposits of the Hårfagrehaugen Formation on Kong Karls Land. The lower part of the section contains light sandstones, the upper one contains shales and siltstones with nodules. The thickness is 30 m. Pelecypods and belemnites occur. The unit correlates with the upper part of the Dunerfjellet Member (?) of the Rurikfjellet Formation. It forms part of the Kongsøya Formation.

E.S.Eršova

TORELL LAND GROUP

E. Triassic to E. Jurassic (?)

(Birkenmajer 1977)

Named from Torell Land, Spitsbergen.

Southern Spitsbergen. The unit rests conformably on the Permian deposits of the Kapp Starostin Formation or with an erosive and angular unconformity on the same or older deposits. It is unconformably overlain by the Jurassic to Cretaceous deposits of the Janusfjellet Formation. The middle (marine) and lower parts of the section contain argillites with minor interbeds of siltstones and sandstones. Up-section there are limestones, often bituminous. The upper part of the succession (mainly fluvial and lacustrine) contain sandstones with minor argillites. The group is subdivided into the Vardebukta, Sticky Keep, Drevbreen (marine) and De Geerdalen (fluvio-lacustrine) formations. The Sticky Keep and Drevbreen Formations are included into the Storbreen Subgroup. The group is equivalent to the Sassendalen Group and Kapp Toscana Group (Formation). The upper part of the group is correlative with the Wilhelmøya Formation and the Iversenfjellet, Flatsalen and Lyngefjellet formations on. The thickness is 420 to over 900 m.

D.V.Semevskij

TRANSITIONAL BEDS

Lt. Triassic

(Smith et al. 1975)

Beds forming part of the Wilhelmøya Member. They constitute a member of the Wilhelmøya Formation.

D.V.Semevskij

TRANSITIONAL MEMBER

Lt. Triassic

(Worsley 1973)

This is the third, in ascending order, of the four members of the Wilhelmøya Formation. It contains loose (interbedded with denser) siltstones and conglomerates. Plant detritus occurs. The thickness is 33 m.

D.V.Semevskij

TRESKELODDEN FORMATION

Lt. Carboniferous to E. Permian

(Birkenmajer 1959, 1964)

Named from a peninsula in Hornsund, Spitsbergen.

Hornsund area, Spitsbergen. The unit rests erosively on the Carboniferous deposits of the Hyrnefjellet Formation and is erosively overlain by the Late Permian Starostin (Kapp Starostin) Formation, or conformably overlain by Permian deposits of the Gipshuken Formation. It forms part of the Gipsdalen Series and contains multicoloured sandstones, shales and attenuating reef limestone horizons. The thickness is up to 170 m. Brachiopods, corals and foraminifers occur.

B.P.Gavrilov

TRIUNGEN CONGLOMERATE MEMBER

E. Carboniferous

(Cutbill & Challinor 1965)

Equivalent to the Triungen Member.

D.V.Semevskij

TRIUNGEN MEMBER

E. Carboniferous

(Cutbill & Challinor 1965)

Named from a mountain on central Spitsbergen.

Central Spitsbergen. The unit forms part of the Hørbyebreen Formation (lower member). It rests with a stratigraphical and angular unconformity on Precambrian or Devonian deposits and is conformably overlain by the Early Carboniferous deposits of the Hoelbreen Member. It consists of sandstones, conglomerates and shales. The thickness is up to 100 m. It represents the microfloral *Raritubevoulatus* Zone (Tournasian).

B.P.Gavrilov, D.V.Semevskij

TRYGGHAMNA FORMATION

E. Carboniferous

(Dineley 1958)

Named from a bay at the north coast of Isfjorden, Spitsbergen.

Western coast of Spitsbergen. The unit correlates with the Orustdalen Formation.

D.V.Semevskij

TSCHERMAKFJELLET FORMATION

Lt. Triassic

(Flood et al. 1971)

Named from a mountain in Dickson Land, Spitsbergen.

The unit was defined as a formation on Edgeøya and Barentsøya. It correlates with the Tschermakfjellet Member (Buchan et al. 1965). The thickness is 64 to 143 m. According to Mørk et al. (1982) it is widespread in central and eastern Svalbard. The thickness is 59 m in the type section.

D.V.Semevskij

TSCHERMAKFJELLET MEMBER

Lt. Triassic

(Buchan et al. 1965)

Named from a mountain in Dickson Land, Spitsbergen.

Svalbard area. The unit forms part of the Kapp Toscana Formation. It conformably overlies the Botneheia Formation and is conformably overlain by the De Geerdalen Member of the Kapp Toscana Formation. It consists of argillites, occasionally grading into clayey siltstones and fine sandstones. Sideritic nodules with ammonites and bivalves occur. The thickness of the type section is 59 m. Flood et al. (1971) raised the members to formation rank for Edgeøya and Barentsøya. Harland et al. (1974) applied this to Spitsbergen. The same rank is used by Mørk et al. (1982). The unit forms part of the Hahnfjella Formation (Pčelina 1980), forming its lower subformation. Birkenmajer (1977) incorporated the member into the Drevbreen Formation (Torell Land, Sørkapp Land).

M.V.Korčinskaja

TUMLINGODDEN BED

Lt. Triassic to E. Jurassic

(Smith 1975)

Named from a point on Wilhelmøya.

Part of the Wilhelmøya Member, constituting a member of the Wilhelmøya Formation (Worsley 1973).

D.V.Semevskij

TUMLINGODDEN FORMATION

Lt. to M. Jurassic

(Pčelina 1980)

Named from a point on Wilhelmøya.

Northwestern Svalbard. The unit rests erosively on the Late Triassic (Norian) Bjørnbogen Formation and is erosively overlain by the Late Jurassic Agardhfjellet Formation. Near Kapp Mühry (eastern Spitsbergen) two subformations are defined. The unit contains multicoloured, loose sandstones, sands, interbeds and strata of coals, ferruginous and phosphatic nodules. At the base of the section thin intercalations of coaly rocks are observed. The thickness of the lower subformation (Hettangian to Sinemurian)(?) is 25 m. The upper subformation (Pliensbachian to Bathonian, Bajocian(?) hiatus) is 35 to 40 m thick. The overall thickness is 60 to 65 m. Along with the Lyngfjellet, Teistberget and Sørkapp formations and the Brentskardhaugen Member it forms part of the Tumlingodden Horizon. Bivalves, ammonites, belemnites, gastropods and foraminifers occur. The unit correlates with the Wilhelmøya Formations in accordance with the scheme of Mørk et al. (1982).

T.M.Pčelina

TUMLINGODDEN HORIZON

Lt. to M. Jurassic

(Pčelina 1980)

Named from a point on Wilhelmøya.

Svalbard. The unit collects the Tumlingodden, Sørkapp, Lyngfjellet and Teistberget formations and the Brentskardhaugen Bed. The base of horizon shows persistent reworked products of the underlying rocks. It correlates with the Late Jurassic part of the Wilhelmøya Formation according to the scheme of Mørk et al. (1982), the Svenskøya Formation and the lowermost Kongsøya Formation on Kong Karls Land (Smith et al. 1976).

T.M.Pčelina

TUMLINGODDEN MEMBER

Lt. Triassic to E. Jurassic

(Worsley 1973)

Named from a point on Wilhelmøya.

This unit forms the upper of the four members within the Wilhelmøya Formation. It contains cross-bedded sandstones, clays and coal lenses. The top-most 10 m of the section, later referred to as "Brentskardhaugen Bed", contain phosphoric nodules with ammonites and bivalves. The thickness is 60 m.

D.V.Semevskij

TUNHEIM SERIES

E. Carboniferous

(Horn & Orvin 1928)

Equivalent to the 30 m thick coal-bearing part of Worsley & Edwards's (1976) Tunheim Member or Pavlov & Evdokimova's (1983) Tunheim Subformation of the Røedvika Formation. The authors suggested a Late Devonian age for the series.

D.V.Semevskij

TUNHEIM MEMBER

E. Carboniferous

(Worsley & Edwards 1976)

Named from a settlement on Bjørnøya.

Bjørnøya. This is the upper of the three members within the Røedvika Formation, forming part of the Ursa Sandstone Unit. It rests conformably on Famennian-Tournasian rocks of the Kapp Levin Member and is erosively overlain by the Carboniferous Nordkapp Formation. It was first recognized as the upper half of the Devonian Røedvika Formation by Horn & Orvin (1928). It consists of sandstones alternating with argillites. Coal strata of workable thickness are observed. Basal conglomerates are present. Plant fossils occur. The thickness is 80 m (up to 130 m from other data). According to Pavlov & Evdokimova (1983) it correlates with the Tunheim and Fugle formations.

D.V.Semevskij

TUNHEIM SUBFORMATION

E. Carboniferous

(Pavlov & Evdokimov 1983)

Named from a settlement on Bjørnøya.

Bjørnøya. This is the second (in ascending order) of the five subformations within the Røedvika Formation,

forming part of the Ursa Sandstone Series. The unit conformably overlies the Kapp Levin Subformation and is conformably overlain by rocks of the Fugle Subformation. It consists of sandstones, siltstones and argillites. There are three to six coal seams, one being of workable thickness. The bulk of the subformation corresponds to that of the coal-bearing part of the Tunheim Member in Worsley & Edwards's (1976) scheme.

D.V.Semevskij

TVILLINGODDEN FORMATION

Lt. Triassic

(Pčelina 1980)

Named from a point at the south coast of Isfjorden, Spitsbergen.

West coast of Spitsbergen. The unit forms part of the Bjørnbogen Horizon. It is coeval with the Keilhaufjellet, Bjørnbogen and Flatsalen Formations. It rests conformably on the Late Triassic deposits of the Isfjorden Formation and is erosively overlain by the Jurassic Tumllingodden Horizon. The lower member of the formation is represented by sandstones with phosphoritic nodules, the upper one by argillites with interbeds of sandstones and carbonate rocks. Bivalves and echinoderms occur. The thickness is 1 to 21 m. According to Mørk et al. (1982) it correlates with the lower part of the Wilhelmøya Formation.

T.M.Pčelina

TVILLINGODDEN FORMATION

E. Triassic

(Mørk et al. 1982)

Named from a point at Isfjorden, Spitsbergen.

Western Spitsbergen. The unit forms part of the Sassendalen Group. It conformably overlies the Induan deposits of the Vardebukta Formation and is conformably overlain with a sharp boundary by the Middle Triassic deposits of the Bravaisberget Formation. The rocks are shales, grading up-section into bioturbated siltstones. In the lower part of the section there are interbeds of sandstones and siltstones, in the upper occasionally a brachiopod-rich sandy limestone intercalation may occur (Skilisen Bed). (The Skilisen (Retzia Limestone) Bed was introduced by Birkenmajer (1977) and belongs to the Vardebukta Formation underlying the Tvillingodden Formation.) * Ammonites and bivalves occur. The thickness is 220 m in the type section. It is equivalent to the upper part of the Kistefjellet Formation and the Sticky Keep Formation (according to Buchan et al. 1965), the Sticky Keep Member (according to Flood et al. 1971) and the Wichebukta Horizon (according to Pčelina 1983).

D.V.Semevskij

* added to this translation by T.M.Pčelina

TYRRELLFJELLET MEMBER

E. Permian

(Cutbill & Challinor 1965)

Named from a mountain in Bünsow Land, Spitsbergen.

Spitsbergen, except for its southern part. The unit forms part of the Nordenskiöldbreen Formation, forming its upper member. It comprises the Brucebyen, Kiaerfjellet and Limestone B beds. It rests conformably on deposits of the middle member of the Nordenskiöldbreen Formation, the Cadelfjellet or Kapitol members, or rests erosively on the Mørebrean Member or Tårnkanten Formation, being overlain by the Gipsjukan Formation. The rocks are limestones, dolomites, occasional up to 10 m thick conglomerates in the lower part of the section. According to Sosipatrova (1967) the deposits of the member are correlated with the beds containing *Pseudofusulina nana* and *Pseudoschwagerina truncata* dated as Late Carboniferous to Early Permian. Recent data evidence is in favour of the Permian age. Corals, brachiopods, pelecypods and bryozoans occur. The thickness may attain 240 m. The member was previously referred to as the Wordiekammen Upper and Lower Limestone members (Forbes et al. 1958).

B.P.Gavrilov

TÅRNKANTEN SANDSTONE FORMATION

M. Carboniferous

(Dineley 1958)

Named from a mountain at the west coast of Spitsbergen.

West coast of Nordenskiöld Land and Oscar II Land, Spitsbergen. The unit rests on the Middle Carboniferous deposits of the Petrelskardet Formation. Overlying deposits are not known. The formation forms the basal part of the Gipsdalen Group. It is equivalent in facies to the Ebbadalen Formation. The rocks are red sandstones with thin interbeds of shales and rare limestones. Their thickness is up to 250 m.

B.P.Gavrilov

U

ULENESET MEMBER

Lt. Triassic

(Smith 1975)

Named from a point on Wilhelmøya.

Northeastern Spitsbergen and Wilhelmøya. The unit rests conformably on the Triassic deposits of the Tschermakfjellet Formation and is conformably (?) overlain by the Wilhelmøya Member of the De Geerdalen Formation. It contains siltstones, fine-grained sandstones with interbedded calcareous varieties and thin intercalations of coal. Bivalves occur scarcely. Pollen-and-spore assemblages of a Norian age are found. The thickness exceeds 380 m. According to Pčelina's (1980) scheme the Uleneset Member corresponds to the upper member of the Hahnfjella and the Isfjorden Formation, according to Mørk et al. (1982) to the De Geerdalen Formation.

D.V.Semevskij

ULLABERGET MEMBER

E. Cretaceous

(Birkenmajer 1975)

Named from a mountain in Torell Land, Spitsbergen.

Southern Spitsbergen. It rests conformably on the Tirolapasset Member of the Janusfjellet Formation and is transgressively overlain by the Cretaceous deposits of the Helvetiafjellet Formation. The unit contains interbedded dark argillites and thin siltstones and sandstones. Abundant sideritic nodules occur. The thickness is 10 to 150 m. It forms part of the Janusfjellet Formation and correlates with the coeval part of the Rurikfjellet Member (or Rurikfjellet Formation, according to Pčelina 1983).

E.S.Eršova, D.V.Semevskij

ULLABERGET SERIES

E. Cretaceous

(Różycki 1959)

Equivalent to the Ullaberget Member.

E.S.Eršova

UNTERER GYPSTUFE M. Carboniferous

(Nathorst 1910)

The unit was defined in central Spitsbergen for the interval between "Culm Sandstones and "Cyathophyllum Limestones". Middle Carboniferous age was suggested. It is equivalent to the Ebbadalen Formation.

B.P.Gavrilov

UPPER ARGILLITE FORMATION

Eocene

(Livšic 1965)

The unit was recognized in Nordenskiöld Land, Spitsbergen. The thickness is 220 to 330 m. It is equivalent to the Frysjaodden Formation and dated by the author as Eocene to Oligocene.

D.V.Semevskij

UPPER BLACK SHALE SERIES

Eocene

(Nathorst 1910)

Equivalent to the Frysjaodden Formation.

D.V.Semevskij

UPPER COAL-BEARING SANDSTONE FORMATION

Oligocene

(Ljutkevič 1937)

The unit was defined at the southern coast of Isfjorden. The minimum thickness is 300 m. It is equivalent to the Storvola Formation and dated by the author as Eocene.

D.V.Semevskij

UPPER COAL-BEARING SERIES

Oligocene

(Nathorst 1910)

It was defined in the northern Spitsbergen Trough. Its minimum thickness is 300 m. The unit is equivalent

to the Storvola Formation.

D.V.Semevskij

UPPER FISSILE SANDSTONE FORMATION

Eocene

(Ljutkevič 1937)

The unit was defined at the southern coast of Isfjorden, Spitsbergen. The thickness is 200 to 250 m. It is equivalent to the Collinderodden Formation.

D.V.Semevskij

UPPER GYPSIFEROUS SERIES

E. Permian

(Gee et al. 1953, Forbes et al. 1958)

Equivalent to the Gipshuken Formation of the Gipsdalen Series.

B.P.Gavrilov

UPPER GYPSUM ZONE

E. Permian

(Cutbill & Challinor 1965)

This is the upper gypsum-anhydrite horizon of the Gipshuken Formation, Gipsdalen Series. It occurs commonly at the western coast of Spitsbergen from Brøggerhalvøya to Nordenskiöld Land. East of the line Grønfjorden - head of Kongsfjorden it overlies the lower gypsum-anhydritic horizon (Lower Gypsum Zone). The thickness is not indicated.

D.V.Semevskij

UPPER LAMINA SANDSTONES (FORMATION)

E. Cretaceous

(Hagerman 1925)

Southern Spitsbergen. The unit is overlain by Paleogene deposits with an erosive boundary. It overlies the "Cretaceous Shales". The rocks are thin, fine-grained greyish-brown sandstones, interbedded with shales. It is equivalent to the Langstakken and Zillerberget Members of the Carolinefjellet Formation (Parker 1967, Nagy 1970).

D.V.Semevskij

UPPER MEMBER

Permian

(Bates & Schwarzacher 1958)

The unit occurs in the area between Ekmanfjorden and Dicksonfjorden, Spitsbergen. It forms part of the Evaporite Series. There is no equivalent unit in Cutbill & Challinor's (1965) scheme. The thickness is not indicated.

D.V.Semevskij

UPPER NODULE BEDS

Lt. Triassic

(Gregory 1921)

Named from the composition of rocks.

Central Spitsbergen. The name was given without further detailed description to the Triassic section on the south-west side of the Sassendalen. The unit rests on the "Ooze Beds" and is overlain by the "Plateau Flags". Stolley (1911) described from these beds, which in his view are composed of clays with small calcareous nodules, *Nathorstites* ammonites and assigned them to the *Nathorstites tenuis* Zone dated as Carnian. According to Buchan et al. (1965) and Mørk et al. (1982) the Upper Nodule Beds correspond to the Tschermakfjellet Formation, according to Pčelina (1983) they represent the lower subformation of the Hahnfjella Formation.

M.V.Korčinskaja

UPPER PLANT-BEARING SANDSTONE SERIES

Oligocene

(Orvin 1940)

The unit was recognized in the Spitsbergen Trough. The thickness is 100 to 600 m. It is equivalent to the Storvola Formation. Eocene age is suggested.

D.V.Semevskij

UPPER POSIDONIA (POSIDONOMYA) SHALES
(Spath 1921)

E. Triassic

Named from a characteristic fauna.

Central Spitsbergen. In the Sassenfjorden section within the succession of "Black Shales and Yellow Flags" (Gregory 1921), Spath (1921) recognized beds with saurs and upper posidonian beds, in contrast to the Lower Posidonia Shales, with *Posidonia mimer* Oeberg. The characteristic fauna shows *Claraia* (= *Posidonia*) *arunia* Tozer, *Keyserlingites subrobustus* Mojs.; *Svalbardiceras spitsbergensis* (Freb.). According to Korčinskaja (1982) the beds form part of the Olenekian *Keyserlingites subrobustus* Zone.

M.V.Korčinskaja

UPPER SANDSTONE FORMATION
(Livšic 1965)

Oligocene

The unit was recognized in the northern part of the Spitsbergen Trough. The thickness exceeds 600 m. It is equivalent to the Storvola Formation, including the upper part of the Collinderodden Formation. Oligocene to Miocene age is suggested.

D.V.Semevskij

UPPER SANDSTONE SERIES
(Hoel 1929)

Eocene to Oligocene

The unit was recognized in the northern part of the Spitsbergen Trough. The thickness is 500 m. It is equivalent to the Collinderodden and Storvola formations.

D.V.Semevskij

UPPER SAURIAN NIVEAU
(Wiman 1910)

M. Triassic

Named from a vertebrate fauna.

Central Spitsbergen, Isfjorden area. The Upper Saurian Niveau represents the upper part of the Daonella Beds, the so-called "Proper Daonella Beds". Reptile bone remains are common within the uppermost beds. According to Korčinskaja (1982) it is assigned to the *Nathorstites mcconnelli* Zone. Pčelina (1983) and Mørk et al. (1982) assigned them to the Botneheia Formation (upper part) and Tschermakfjellet Formation (lower part).

D.V.Semevskij

UPPER TRANSITIONAL FORMATION
(Livšic 1965)

Eocene

The unit was recognized in the northern part of the Spitsbergen Trough. The thickness is 50 to 240 m. It is equivalent to the lower part of the Collinderodden Formation. Dated by the author as Eocene-Oligocene.

D.V.Semevskij

UPPER UNIT
(Tyrrell 1924)

Paleogene

The Upper Unit is extensively exposed on the Forlandsundet coasts, though mainly on Prins Karls Forland. The thickness attains up to 2500 m. It is currently subdivided into the Sesshøgda, Reinhardpynten, Krokodillen and Marchaislaguna formations dated as Eocene to Oligocene (Livšic 1967).

D.V.Semevskij

URD FORMATION
(Krasil'shikov & Livšic 1974)

E. to M. Triassic

Named from a top of Miseryfjellet, Bjørnøya.

Bjørnøya. The unit forms part of the Sassendalen Group. It rests with a sharp boundary on Permian deposits and is overlain by the Late Triassic Skuld Formation. At the base of the section there are finely laminated siltstones interbedded with shales. Shales form the upper part. In the uppermost part of the succession a layer of phosphoritic conglomerates, 0.2 m thick, occurs, the Middle Triassic Verdande Bed. The thickness is 65 m. The unit is equivalent to all other units of the Sassendalen Group (Mørk et al. 1982). It correlates with the Vardebukta and Wichebukta Formations on Svalbard.

D.V.Semevskij

URNETOPPEN MEMBER

E. Triassic

(Birkenmajer 1977)

Named from a mountain near Hornsund, Spitsbergen.

Southern Spitsbergen. This is the lower member of the Vardebukta Formation, Torell Land Group. It rests conformably or unconformably on Permian deposits of the Starostin Formation, or unconformably on older rocks. The unit contains interbedded sandstones, siltstones, and occasional glauconite at the base. The top of the succession has been termed Brevassfjellet Beds. This part contains sideritic to pyritic limestones, argillites and sandstones. Bivalves and ichthyofauna fragments occur. The thickness is up to 30 m.

D.V.Semevskij

URSA SANDSTONE UNIT

Lt. Devonian to E. Carboniferous

(Holtedahl 1920)

Bjørnøya. It is currently subdivided into the Røedvika and Nordkapp Formations.

D.V.Semevskij

V**VAKTAREN MEMBER**

E. Devonian

(Friend et al. 1966)

Named from mountain in Andree Land, Spitsbergen.

These are so called "pale beds" forming the uppermost Kapp Kjeldsen Formation that has previously been recognized by Føyn & Heintz (1943). The unit contains interbedded greenish and brownish sandstones, siltstones, argillites and silty limestones. It is a local marker unit.

L.G.Murašov, D.V.Semevskij

VAN KEULENFJORDEN FORMATION

M. Triassic

(Pčelina 1983)

Named from a fiord, Spitsbergen.

West coast of Spitsbergen, including Hornsund and Sørkapp Land. The unit correlates with the upper beds of the Botneheia Formation (according to Pčelina 1983) dated as Late Ladinian. It rests conformably on the sharp boundary of the Bravaisberget and Hymefjellet formations of Anisian to Early Ladinian age. It is overlain by the Hahnfjellet Formation with a sharp boundary. There are two members, the upper with siltstones interbedded with sandstones and spongolite inclusions, the lower with carbonate siltstones. Ammonoidea, bivalves, algae and occasionally foraminifera occur. The thickness is 29 to 67 m.

T.M.Pčelina

VAN MIJENFJORDEN GROUP

Paleogene

(Harland 1969)

Named from a fiord of Spitsbergen.

This group collects up to 1500 m thick Paleogene deposits of the Spitsbergen Trough. It is subdivided into 6 formations, reflecting three sedimentation cycles (Kellogg 1975).

D.V.Semevskij

VARDEBUKTA FORMATION

Triassic

(Buchan et al. 1965)

Named from a bay at the south coast of Isfjorden, Spitsbergen.

Western Spitsbergen. The unit rests with a stratigraphic unconformity on the Late Permian Selander and Starostin (Kapp Starostin) formations, and is conformably overlain by the Early Triassic Tvillingodden Formation. It contains dark grey argillites and siltstones, commonly calcareous, and sandstones in western areas. There are two members, the lower one 16 to 136 m, the upper one 70 to 245 m thick. The overall thickness of the formation attains 330 m, in the type section 290 m. Ammonoids, bivalves, brachiopods and ichthyofauna occur. The unit forms part of the Vardebukta Horizon of the Sassendalen Series (Group). In eastern Svalbard the formation is correlated with the Deltadalen Member of the Barentsøya Formation, while near Sørkapp Land its upper part is correlated with the Kistefjellet Member. In the Isfjorden area it is divided into the Selmaneset

and Siksaken Members. Near Hornsund Birkenmajer (1977) identified the Urnetoppen and Viberbreen Members. Korčinskaja (1986) has recognized the *Otoceras boreale*, *Proptychites rosenkrantzi* and *Vavilovites spitsbergensis* zones by ammonoid and bivalve assemblages in the lower part of the formation.

T.M.Pčelina, D.V.Semevskij

VARDEBUKTA HORIZON*

E. Triassic

(Pčelina 1983)

After a bay at the south coast of Isfjorden, Spitsbergen.

Collective name for the Vardebukta Formation (western Triassic section), the Deltadalen Member of the Barentsøya Formation (eastern section) and the coeval Kistefjellet Member deposits (Sørkapp Land).

T.M.Pčelina

* added to this translation by the author

VEGARD FORMATION

E. Carboniferous

(Dineley 1958)

Named from mountains (Vegardfjella) at St. Jonsfjorden, Spitsbergen.

Western Spitsbergen. The unit forms part of the Billefjorden Series (Group). It is coeval with the Hultberget Member of the Svenbreen Formation. It rests conformably on the Early Carboniferous Orustdalen Formation and is erosively overlain by the Middle Carboniferous Petrelskardet Formation. The rocks are multicoloured, fine-laminated sandstones and shales, as well as siltstones, argillites and conglomerates (the latter decreasing southward). In the south thin coaly interbeds are observed. The thickness increases southward from 30-60 m on Brøggerhalvøya to 360 m in Nordenskiöld Land. Miospores occur.

B.P.Gavrilov, D.V.Semevskij

VERDALEN MEMBER

E. Devonian

(Føyn & Heintz 1943)

Equivalent of the Verdalen Subformation.

L.G.Murašov

VERDALEN SUBFORMATION

E. Devonian

(Murašov & Mokin 1976)

Named from a valley in Andree Land, Spitsbergen.

Andree Land, Spitsbergen. Red, silty limestones and silts occur. The thickness attains 100 m, attenuating southward. It was first recognized as a 500 m thick unit by Føyn & Heintz (1943). It forms part of the Gjelsvikfjellet Formation (lower part). Ichthyofauna is present.

L.G.Murašov

VERDANDE BED

M. Triassic

(Krasil'shikov & Livšic 1974)

Named from a top of Miseryfjellet, Bjørnøya.

Bjørnøya. The bed forms the uppermost layer of the Urd Formation, overlain by the Late Triassic Skuld Formation. It consists of phosphorite conglomerates containing pebbles of several cm grain-size. The thickness is 0.2 m. It is coeval with the Bravaisberget Formation or Botneheia Member of the Sassendalen Group.

D.V.Semevskij

VESALSTRANDA MEMBER

Lt. Devonian

(Worsley & Edwards 1976)

Named from a coast on eastern Bjørnøya.

Bjørnøya. This is the lowest of the three members of the Devonian Røedvika Formation, included into the Ursa Sandstone Unit. It rests on the tectonic boundary or on the eroded surface of Precambrian deposits and is conformably overlain by the Famennian to Tournaisian Kapp Levin Member of the same formation. It was firstly recognized by Horn & Orvin (1928) as the lower subformation of the Røedvika Formation. The unit consists of alternating siltstones, argillites and quartz sandstones. Seams and intercalations of coals are particularly common within the upper part of the member. At the base of the section, 3-5 m thick conglomerates occur. Ichthyofauna and plant fossils are observed. The thickness is up to 200 m. (According to other data it is up to

220 m). Pavlov & Evdokimova (1983) regard the member as equivalent to the Slækk and Misery subformations.

D.V.Semevskij

VØRINGEN MEMBER

E. Permian

(Cutbill & Challinor 1965)

Named from a mountain to the west of Grønfjorden, Spitsbergen.

Nordenskiöld Land, central Spitsbergen. On the Ny Friesland peninsula (Spitsbergen) it is not distinguished from the Svenskeegga Member. The unit rests conformably on the Early Permian Gipshuken Formation and is overlain by the Late Permian Svenskeegga Member of the Kapp Starostin Formation, being part of the latter. Rocks are light grey limestones. The thickness is up to 40 m. Brachiopods occur. It is equivalent to the "Spirifer Limestone" (Nathorst 1910) and the "Limestone A" (Forbes et al. 1958).

B.P.Gavrilov, D.V.Semevskij

W

WIBEBREEN MEMBER

E. Triassic

(Birkenmajer 1977)

Named from a glacier at Hornsund, Spitsbergen.

Southern Spitsbergen. This is the upper member of the Vardebukta Formation. It conformably overlies the Urnetoppen Formation and is conformably overlain by the Olenekian Sticky Keep Formation. The unit contains argillites (to marls), siltstones and fine-grained sandstones. Ammonites, bivalves and brachiopods occur. The thickness attains 195 m, 47 m in the type section. The Skilisen Bed (Retzia Limestone) is defined in the upper part of the member. The age is Late Induan (Dienerian).

M.V.Korčinskaja

WICHEBUKTA FORMATION

E. Triassic

(Pčelina 1983)

Named from a bay on northeastern Spitsbergen.

Eastern Svalbard, including Edgeøya, Barentsøya, Wahlbergøya, Nordaustlandet and Bjørnøya. The unit rests conformably on Induan deposits of the Vardebukta Horizon (except for central Edgeøya where it lies on Late Permian rocks) and is conformably overlain by the Middle Triassic deposits of the Botneheia Horizon. This is primarily a uniform unit of bituminous argillites; the lower part of the succession contains a member (20 to 45 m) of thinly laminated dark argillites and light calcareous siltstones. Calcitic and dolomitic nodules are observed. It correlates with the Sticky Keep Member of the Barentsøya Formation (Mørk et al. 1982). Based on ammonoid assemblages two zones are defined: *Arctoceras blomstrandii* at the base, and *Keyserlingites subrobustus* at the top, dated as Olenekian (Korčinskaja 1975). The thickness is 85 to 215 m. Ammonoids, bivalves, brachiopods, reptiles, ichthyofauna and benthic algae occur. The unit forms part of the Wichebukta Horizon. It is coeval with the Pitnerodden Formation.

T.M.Pčelina

WICHEBUKTA HORIZON

E. Triassic

(Pčelina 1983)

This unit collects the Tvillingodden (or Pitnerodden; Pčelina 1983) Formation (western-type section), the Sticky Keep Member (Wichebukta Formation; Pčelina 1983: eastern-type section) and coeval beds of the Kistefjellet Member (Sørkapp Land).

T.M.Pčelina

WIJDE BAY FORMATION

M. Devonian

(Friend et al. 1966)

Named from Wijdefjorden, Spitsbergen.

Andree Land, Spitsbergen, coast of Wijdefjorden. The unit rests conformably on the Devonian Grey Hoek Series. Overlying deposits are missing. Grey sandstones, quartzites, siltstones and argillites occur. The thickness attains 600 m. Fossils are ichthyofauna, pelecypods and flora. Holte Dahl (1914) recognized the group as the Wijde

Bay Series, which by Murašov & Mokin (1976) was renamed to "Tage Nilsson Formation".
L.G.Murašov

WIJDE BAY SERIES

M. Devonian

(Holtedahl 1914)

Equivalent to the Wijde Bay Formation.

D.V.Semevskij

WIJDEFJORDEN SERIES

See Wijde Bay Formation.

D.V.Semevskij

WILHELMØYA FORMATION

Lt. Triassic* to E. Jurassic

(Worsley 1973)

Named from a island.

Wilhelmøya and northern Spitsbergen. The unit rests conformably on the Late Triassic De Geerdalen Formation and is transgressively overlain by the Jurassic Agardhfjellet Formation. In type section on Wilhelmøya it is subdivided into four units, in ascending order: the Basal Bed (sandstones, at the base a pebble layer), 7 m thick; the Bjørnbogen Member (argillites with clay-siderite concretions, bivalves, reptile remains), 19 m thick; the Transitional Member (loose siltstones, conglomerates, floral detritus), 33 m thick; the Tumlingodden Member (sandstones, clays, coal lenses, phosphoritic concretions with ammonites and bivalves in the upper part of the section), 60 m thick. The 10 m thick bed containing concretions was later named Brentskardhaugen Bed. The thickness of the formation in the type section is about 130 m. According to Smith (1975) it is a member of the De Geerdalen Formation. Worsley & Heintz (1977) and Bjærke & Manum (1977) extended the formation to Kong Karls Land (instead of Svenskøya Formation) and to Hopen, where it includes the Flatsalen and Lyngfjellet members. Mørk et al. (1982) extended the formation to all of Svalbard. They dated it as Norian through Rhaetian to Bathonian. The formation comprises the deposits of the upper part of the De Geerdalen Member on Spitsbergen (according to Buchan et al. 1965, the Flatsalen and Lyngfjellet formations on Hopen, the Wilhelmøya Member on Wilhelmøya, the upper part of the Svenskøya Formation and lower part of the Kongsøya Formation on Kongs Karls Land (according to Smith et al. 1976). Mørk et al. (1982) did not recognize the members identified by Worsley. They just pointed out the Brentskardhaugen Bed on the top. However, they defined the Smallegga Member as part of the formation in southern Spitsbergen and the Knorringfjella Member in central Spitsbergen. Pčelina (1980) identifying a hiatus within the Rhaetian to Early Liassic strata on Spitsbergen, distinguishes the Keilhaufjellet, Tvillingodden, Bjørnbogen and Flatsalen formations (The Triassic Bjørnbogen Horizon) instead of the lower part of the Wilhelmøya Formation, and the Sørkapp, Teistberget, Tumlingodden and Lyngfjellet formations (the Jurassic Tumlingodden Horizon) instead of its upper part.

M.V.Korčinskaja

* not used for Triassic deposits by T.M.Pčelina

WILHELMØYA MEMBER

Lt. Triassic to E. Jurassic

(Smith 1975)

Named from a island.

Member of the De Geerdalen Formation. The author reduced the Wilhelmøya Formation (Worsley 1973) to the rank of a member, while the contained members were reduced to beds.

M.V.Korčinskaja

WOOD BAY FORMATION

E. Devonian

(Friend et al. 1966)

Equivalent to the Wood Bay Series.

D.V.Semevskij

WOOD BAY SERIES

E. Devonian

(Holtedahl 1914)

Named from Woodfjorden, Spitsbergen.

Andree Land. The unit rests conformably on the Devonian Red Bay Series and is conformably overlain by

the deposits of the Devonian Grey Hoek Series. It contains multicoloured and red siltstones, argillites, sandstones and scarce gritstones. Limestone interbeds occur in the lower part. Murašov & Mokin (1976) distinguished the Kapp Kjeldsen, Keltiefjellet, Stjørdalen formations and the lower part of the Gjåsvikfjellet Formation within the series. Friend et al. (1966) did not divide the series into formations. The thickness is about 2900 m. Ichthyofauna, ostracods and plant fossils occur. Friend et al. (1966) reduced the series to group rank.

L.G.Murašov

WOODFJORDEN SERIES

See Wood Bay Series.

D.V.Semevskij

WORDIEKAMMEN LIMESTONE FORMATION

Lt. Carboniferous

(Gee et al. 1952)

Named from a mountain range in Bünsow Land, Spitsbergen.

Central Spitsbergen. The unit rests on the Transitional Beds of the Campbellryggen Group and is overlain by the Upper Gypsum Series. The lower boundary is the top of "Marker C", beneath the Black Crag Member, while the upper boundary is the top of "Limestones B" (Forbes et al. 1958). Basal breccias, porcelaneous limestones, sandy limestones and sandstones often occur. The thickness is 250 to 230 m. The unit correlates with the lower part of Cyathophyllum Limestones (Nathorst 1910). It is divided into the Black Crag Member, the Lower, Middle and Upper Wordiekammen limestones and Limestone B. It correlates with the Cadellfjellet and Tyrrellfjellet members of the Nordenskiöldbreen Formation.

B.P.Gavrilov, D.V.Semevskij

WORDIEKAMMEN LOWER LIMESTONE MEMBER

Lt. Carboniferous

(Forbes et al. 1958)

Equivalent to the Cadellfjellet Member of the Nordenskiöldbreen Formation. According to Forbes et al. (1958) it forms the lowermost of three members of the Wordiekammen Limestone Formation.

B.P.Gavrilov

WORDIEKAMMEN MIDDLE LIMESTONE MEMBER

E. Permian

(Forbes et al. 1958)

The unit correlates with the lower part of the Tyrrellfjellet Member of the Nordenskiöldbreen Formation (Brucebyen Beds). According to Forbes et al. (1958) it forms the middle one of three members of the Wordiekammen Limestone Formation.

B.P.Gavrilov

WORDIEKAMMEN UPPER LIMESTONE MEMBER

E. Permian

(Forbes et al. 1958)

The unit correlates with the upper part of the Tyrrellfjellet Member of the Nordenskiöldbreen Formation. According to Forbes et al. (1958) it forms the upper of three members of the Wordiekammen Limestone Formation.

B.P.Gavrilov

WULFBERGET FORMATION

E. Devonian

(Murašov & Mokin 1976)

Named from the mountain Wulfberget in Haakon VII Land, Spitsbergen.

Liefdefjorden area, Spitsbergen. It overlies the Devonian Siktelfjellet Formation with an (angular?) unconformity and is conformably overlain by the Devonian Rabotdalen Formation. Rocks are conglomerates with marble pebbles and spread pebbles of other metamorphic and igneous rocks. The thickness is up to 200 m. It forms part of the Red Bay Series.

L.G.Murašov

Y

YELLOW SANDSTONE

Carboniferous

(Anderson 1900)

Bjørnøya. Equivalent of the the Kapp Hanna Formation.

D.V.Semevskij

YMERBUKTA FORMATION

E. Cretaceous

(Pčelina 1983)

Named from a bay at the north coast of Isfjorden, Spitsbergen.

Spitsbergen. The unit rests conformably on the Dalkjegla Formation and is conformably overlain by the Kvalvågen Formation. It is a monotonous succession of alternating clayey silts and argillites with rare silty sandstones interbeds. Numerous and diverse carbonate nodules occur. Fossils are ammonites, bivalves, foraminifers and algae. The thickness is 160 to 190 (?) m. The unit forms part of the Singerfjellet Horizon. It is coeval with the Singerfjellet Formation and correlates with the middle part of the Dirupa Shale Series (Różycki 1959), lower part of the Innkjela Member of the Carolinefjellet Formation (Parker 1967). According to Eršova et al. (1980) it comprises *Tropalum arcticum* beds (Late Aptian) and the *Laymeriella turdefurcata* Zone (Early Albian).

T.M.Pčelina

Z

ZILLERBERGET MEMBER

E. Cretaceous

(Nagy 1970)

Named from a mountain in Nordenskiöld Land, Spitsbergen.

Spitsbergen. The unit rests conformably on the Langstakken Member and is conformably overlain by deposits of the Schönrockfjellet Member, or is unconformably overlain by Paleogene deposits. It forms part of the Carolinefjellet Formation. Rocks are argillites, siltstones with interbeds of sandstones and lenses of clay-ironstone. Abundant bivalves, less frequently ammonites and vermiform burrows occur. The thickness is 28 to 334 m. In Pčelina's (1983) scheme it corresponds to the top of the Kvalvågen Formation.

E.S.Eršova

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