

INTERNATIONAL SUBCOMMISSION ON JURASSIC STRATIGRAPHY

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October 1981

NEWSLETTER No. 7

In July 1981 we sent out an information letter dealing with problems concerning the project proposal. As mentioned in that letter the IGCP Board has not accepted to support our project: "Correlation of Jurassic Biotic Events". Until midth October we received only nine letters concerning the active work of our Subcommission. After all the troubles we had by creating the project proposal we were really disappointed that only two full members reacted on the difficult situation in which we are now. Only the fact that some of the corresponding members and of the convenors as well as other colleagues showed interest in the activities and made useful proposals conviniced us that there might be a number of people really interested in further work.

To find a way out of the very difficult situation, the Chairman and the Secretary met for two days in Erlangen. Having in mind discussions with non-members of the Subcommission and considering the answers mentioned we took the following decisions.

As it is obvious to us, that the present working groups could not operate without international financial support, we propose them substituted by smaller, individual groups with more restricted tasks. From the answers we received, this proposal seems generally accepted. Some of the answers also comprised suggestions for the tasks of the new groups and for larger projects. Therefore, we have decided to start the projects mentioned below and we hope that results will show up soon in our Newsletter, at coming meetings, and elsewhere. The projects described below are suggested to be long term projects.

We consider the main task of our Subcommission to concern with the definition of the Jurassic stratigraphic units. Therefore, from time to time there must go on a revision, compilation, and standardisation of these units. The proces must be based on all formational evidences.

A. Definition, subdivision, and correlation of Jurassic stages:

The general purpose of this work is to establish effective stratigraphic tools for correlation of all kind of Jurassic deposits, and to be able to establish stratigraphic subdivision in despite of sample conditions, size etc. As a basis for starting up we propose to use the paper: Cope, J.C.W., Getty, T.A., Howarth, M.K., Morton, N., & Torrens, H.S. 1980. A correlation of Jurassic rocks in the British Isles. - Geol. Soc. Lond., Special rep. No. 14, 73 p.

It is suggested to establish

- correlation tables of ammonite successions in different basins/ faunal provinces,
- multidisciplinary stratigraphic tables (incl. different fossil groups, lithologic units etc.) for each basin or palaeogeographic regions,
- interbasinal correlation tables.

For each of the project groups mentioned below one coordinator will be asked for by the Chairman. - You are asked to propose to us people who are willing to cooperate actively in these groups. The following small project groups are proposed:

- 1) Hettangian-Sinemurian
- 2) Pliensbachian-Toarcian
- 3) Aalenian
- 4) Bajocian-Bathonian
- 5) Callovian-Oxfordian
- 6) Kimmeridgian-Portlandian/Volgian/Tithonian

As soon as results are obtained from each step they will be published in our Newsletter and elsewhere (e.g. Newsletter on Stratigraphy)

B. General aspects of the Jurassic geology

Pliensbachian/Toarcian palaeoceanographic events:

This item has been proposed by Donovan and Lord. Those members, who wish to contribute, may write to us for the further organization.

C. Regional problems

Basinal developments in the North Sea region during the Jurassic. All who are interested may contact the Secretary.

Development of the Jurassic sedimentary basins around the Bohemian Massif. All who are interested are invited to contact the Chairman.

WORKING GROUPS

The Subcommittee on Triassic Stratigraphy (chairman: Carmina Virgili, Madrid) has decided to create a Triassic-Jurassic boundary Working Group in collaboration with our Subcommittee.

- Suggested members: Wiedmann, Tozer, Wissher, Guex, Mouterde, Bloos, Donovan, Achilles. The list has to be completed, and it will be presented in a coming Newsletter.

In the Jurassic-Cretaceous boundary Working Group Remane has substituted Casey as chairman. The secretary is V.A. Zakharov. The full list of the members is in enclosure 6.

MEETINGS

The meeting of our Subcommittee planned for autumn 1981 (cf. Newsletter No. 6) could not be held, since no results of the first step in our former project have been presented.

Due to the fact that in 1982 already meetings concerning the Jurassic have been announced (see below) we have decided not to arrange a special field meeting of the Subcommittee in 1982. We plan to arrange a combined field and discussion meeting in Europe during 1983.

The three meetings mentioned are

- in Montreal, 6th August 1982 (see enclosure 2)
- in Calgary, 9-14th August 1982 (see enclosure 3)
- in Nikitino near Razan (USSR), 13-19th July 1982: International Colloquium on Jurassic-Cretaceous boundary. The formal circular is expected to be sent out at the end of the year.

The meetings in Montreal and Calgary are organized by G. Westermann who invites all members to participate. The Subcommittee itself has the opinion that this is one of the rare opportunities to come into closer contact with our American colleagues. We will therefore arrange an open Subcommittee meeting during the Calgary Conference.

INFORMATION

An updated list of members and corresponding members of the Subcommission is given in enclosure 1. - Radoicic has unfortunately retired. - China is now represented by one member and three corresponding members.

National reports and personal reports received are reprinted in enclosures 4 and 5 respectively.

A "Comite Sudamericana del Jurásico y Cretácico" has been established in Buenos Aires (address: Museo "B. RIVADAVIA", Av. Cal-lardo 470, 1405 - Buenos Aires, Argentina), and it has distributed two numbers of their "Boletin".

L. Sequeiros (Zaragoza) is working on the following subjects:

1. Stratigraphic and faunistic boundary between Callovian and Oxfordian in the Mediterranean realm,
2. Perisphictidae and Euaspidoceratidae from the Mediterranean realm.

Those, who are interested, can take contact with L. Sequeiros.

FINAL REMARKS

Of financial reasons we have decided to restrict the distribution of our Newsletter to the members and corresponding members of the Subcommission, to closely related Subcommissions, and to working groups. Individual persons asking for the Newsletter will be referred to you. - Therefore, you are asked to distribute the Newsletter within your country/region.

Arnold Zeiss

Olaf Michelsen

ps Please confirm the receipt of Newsletter No. 6.

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October 1981

List of ENCLOSURES for Newsletter No. 7

- Enclosure 1: List of addresses for Chairman, Secretary, Members, and Correspondents
- Enclosure 2: 3rd North American Paleontological Convention, Montreal, 1982
- Enclosure 3: Field Conference Calgary, Alberta, August 1982
- Enclosure 4: National Report No. 7 from G. Pavia, Italy
National Report No. 8 from E. Norling, Sweden
- Enclosure 5: Personal Report from R.W. Imlay, USA
- Enclosure 6: List of members of the International Working Group on the Jurassic-Cretaceous Boundary



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ENCLOSURE 1 for Newsletter No. 7

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*Please report to the Secretary any corrections to the adresses
and any changes*

3RD NORTH AMERICAN PALEONTOLOGICAL CONVENTION, MONTREAL, 1982

August 6th, Symposium #7 - Jurassic-Cretaceous Biochronology and
» Biogeography of North America (in honour
9:00-12:00 of R. W. Imlay and J. A. Jeletzky).
and 14:00-16:30

The Symposium has now been scheduled for the entire day, i.e. 15 1/2 hours.

While the complete papers are intended to be published in a single volume independently of the Congress, the abstracts will be part of the normal Congress proceedings. The Abstract forms are enclosed. They should be filled put according to instructions and returned to me by August 20 th of this year.

Subsequently you will be requested by the Congress1 organizing committee to submit by the end of this year a 6-page synopsis (short form) of your paper for the Congress Proceedings in camera-ready copy.

Below is the listing to date of the approximate titles with suggested speaking + discussion times. Please inform me immediately of any changes in title, if you are satisfied with the time allotted, etc.

F. M. Gradstein of the American Basin.	Jur. chronology and palaeoceanography	20 min.
P. Ascoli/ C. W. Poag and J. Remane	Biostratigraphy and biogeography across the Jur.-Cret. boundary of the calpionellid and foraminiferal-, ostracod assemblages from an off- shore well in the Georges Bank area.	20 min.
R. W. Imlay	Preliminary interpretations of the Jur. palaeobiogeography of North America.	30 min.
J. Callomon	Jur. Boreal chronostratigraphy and biogeography	20 min.

Continued.....

H. W. Tipper	Jurassic tectogenesis of the Canadian Cordillera and biogeographic implications.	30 min.
D. Taylor, P. Smith, G. Westermann, et al	Jurassic (?and Cret.) molluscan biogeography of western North America and microplate palaeolatitude	30 min.
B. E. B. Cameron	Jurassic microfaunal (Foram., Radiol.) biostratigraphy in the Queen Charlotte Islands [and its significance to petroleum exploration].	20 min.
R. Scott	The Mesozoic history of the Mexican Gulf area.	20 min.
S. Alencaster	On Mexican Jur./Cret. molluscan biogeography.	20 min.
E. G. Kauffman	Cretaceous palaeogeography and biogeography of North America.	40 min.
J. A. Jeletzky	Correlation of the Jur.-Cret. boundary beds of W. British Columbia with Arctic Canada, and the boundary position in the Boreal Realm.	30 min.
G. L. Williams	Provincialism in Late Jur.-Early. Cret. dinoflagellates	20 min.
W. A. Cobban and S. C. Hook	Mid-Cret. molluscan biostratigraphy and paleogeography of the S.W. part of the Western Interior, U.S.A.	20 min.
W. G. E. Caldwell and R. North	Cret. foraminiferal vs. ammonite zones and their facies relationship	20 min.

AS SOON AS POSSIBLE, please give me an estimate of

Number-of typed Manuscript pages
Number of text-figures

G. E. G. Westermann
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FIELD CONFERENCE CALGARY. ALBERTA
August 9-14, 1982

Organizers: R. L. Hall
Dept. of Geol. & Geophys
University of Calgary

and

G. E. G. Westermann,
Dept. of Geology
McMaster University

Tentative Programme of Field Trips
(organized by R.L. Hall)

Sunday -- travel to Calgary (subsequent to North American Paleont. Conv. III, Montreal, August 5-7)]

August 9:	morning:	drive to Blairmore area (8:30-11 a.m. approx.)
	afternoon:	Rock Creek section Structure of Sinemurian, Toarcian Poker Chip Shale, Rock Creek member s.S., Bajocian to Bathonian shales, Grey Beds and Green Beds.
	overnight:	motel in Blairmore
	morning:	Fording River, B.C. section (1 hour drive approx.) Sinemurian on Triassic, Toarcian Poker Chip shale, Bajocian "sandstone with Sonn i n i a" and "Rock Creek member"; Bathonian Grey *.. Beds.
	afternoon:	Grassy Mountain section Bathonian Gryphaea Bed and Corbula munda Beds
	overnight:	University of Calgary residence

August 11: Conference sessions, University of Calgary, Department of Geology and Geophysics

August 12: Conference sessions, University of Calgary, Department of Geology and Geophysics

August 13: morning: drive to Red Deer River area (2-3 hours approx.)

afternoon: Bighorn Creek section Triassic-Jurassic contact; Sinemurian, Pliensbachian Red Deer Member, Toarcian Poker Chip Shale, Bajocian belemnite beds ("Rock Creek member"), Bathonian Grey Beds

overnight: Mountain Aire Lodge

August 14 morning: Clearwater River section Paleozoic-Jurassic contact; Pliensbachian Nordegg Member and Oxytoma Bed.

afternoon: Banff Traffic Circle section Bathonian Grey Beds and Passage Beds-Kootenay Group transition.

Single or twin accommodations at the University residence will be available. Reasonably priced motels and lodges will be used during the field trips. We hope to finance at least the field transportation from University of Calgary grants. For overseas travel from developing countries grants are expected from the International Geological Correlation Program and from the Canada Science and Engineering Research Council. Scientific exchange visits can hopefully be worked out with other countries (i.e. U.S.S.R.). We hope to keep the "ota'l Conference cost to \$200-\$250.

I plan to attend the Jurassic Field Conference probably
Calgary, August 9-14, 1982

possibly

depending on receipt of Conference grant (for
subtopic Organizers, topic co-ordinators or their delegates
from developing countries)

NAME:

Return by August 15, 1981 to G. E. Westermann,
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TORINO, June 1980

Report No. 7

From G. Pavia: ITALY (first report)

This report covers the stratigraphic researches carried on the Italian Jurassic during 1970-79 and the ones programmed for 1980. The informations reported in these pages come directly from the researchers as replies to a questionnaire delivered to all the Italian Universities and Research Centers. During the collection of these informations, the possibility to form a standing Jurassic Working Group has come out; this group would be coordinated in the existing research group "Stratigraphic Paleontology and Evolution" of the Italian C.N.R.. At last, I mention that the Rosso Ammonitico Symposium on Mediterranean Jurassic condensed sequences took place in Rome from 16 to 21 June. The report is divided in two sections: the first (Stratigraphy) includes general stratigraphic researches, geographically listed W-E and N-S Italy; the second part (Paleontology) includes studies referred to some particular taxonomic group. Quotations are accompanied by the numbers of the bibliographic list.

STRATIGRAPHY (and sedimentology)

P. CASATI (Milano Univ.) has studied the "Breccia di Inverio" (Piemonte) of probable Liassic age (3) and is working on the stratigraphy of M. Tudaio (Cadore, Veneto). G. CANTALUPPI (with some collaborator of the Pavia Univ.) has resumed his biostratigraphic and taxonomic researches (Brachiopoda, Mollusca) on the Liassic famous localities of Gozzano, Saltrio, Moltrasio of the Prealpi Occidentali. N. FANTINI SESTINI, M. GAETANI and G. POLIANI. (Milano Univ.) are currently working on the Lower and Middle Jurassic stratigraphy of the Prealpi Bergamasche (9) and particularly on the Domerian biostratigraphy (8). M. GAETANI is interesting v to the geochemistry of the anoxic Sediments of the Lower Toarcian.

P.A. CLARI (Torino Univ.) is carrying on a sedimentological and stratigraphic research on the Jurassic formations "Oolite di Capo S. Vigilio" and "Rosso Ammonitico Veronese" with biostratigraphic check according to the ammonite faunas (coll. G. PAVIA). F. MASSARI (Padova Univ.) studied the sedimentological significance of the oncolitic and stromatolitic associations of the "Rosso Ammonitico Veneto" (17) in collaboration with P. GRANDESSO. B. MARTINIS (Milano Univ.) described the Jurassic sequence "of Erto-Casso area (Veneto) (16). D. MASETTI (Ferrara Univ.), in coauthorship (15), defined the sedimentological and

paleogeographical significance of the "Encrinite di Fanes" (Alpi Meridionali Venete) of Liassic age.

A. FARINACCI and her collaborators of Roma Univ. form a research group which is currently working on the biostratigraphy, paleoecology and taxonomy of the Jurassic associations in the umbro-marchigiana area (Central Apennines); they have obtained a punctual biostratigraphy of the Jurassic formations and recognized some ecological fluctuation in that sequence (6, 7, 12, 13, 14, 19).

I. DIENI and F. MASSARI (Padova Univ.) have started a stratigraphic and paleogeographic study on the Middle and Upper Jurassic of Central-Eastern Sardinia according to the floristic and faunistic associations. G. FORTELEONI PIAMONTI (Sassari Univ.), in

collaboration with the Geological Institute of Modena Univ., just began a study on the stratigraphy and paleoecology of the Western Sardinia Jurassic.

PALEONTOLOGY

Protozoa and calcareous nannoplankton - E. ANDRI and M.C. BONCI (Genova Univ.) studied the lorica structure in the Tintinnidae of different Upper Jurassic - Lower Cretaceous micritic formations in N Italy (1). C. PIRINI RADRIZZANI (Milano Univ.) is working on the biozones (foraminifers and calcareous nannoplakton) of the Jurassic sequence in Lombardia and Toscana with comparison to the ammonite biozones; her first contribution to this research is in press for the Margaritatus Zone of Alpe Turati. P. GRANDESSO (Padova Univ.) studies the calpionellids and calcisphaerulids of the Upper Jurassic in Venetian Alps; he delivered a paper on the praecalpionellids at the upper boundary of the Rosso Ammonitico Formation (10). F. SCHIAVINOTTO (Roma Univ.) delivered two papers on the foraminiferal associations of Upper Liassic age in Umbria (6, 11).

Anthozoa - N. MARIOTTI *et alii* (Roma Univ.) have finished a work on the Bajocian corals in Umbria (14)» while U. NICOSIA, in coauthorship (17), studied hermatypic corals of Tithonian age in the Central Apennines.

Brachiopoda - C. BENIGNI (Milano Univ.) has reviewed the Liassic Rhynchonellida of the Venetian Alps (2) with a new species: E. TADDEI RUGGIERO (Napoli Univ.) is working on the brachiopods of Lower Liassic of Longobucco (Calabria) and of Malm in Nurra (Sardinia).

Cephalopoda - G. CANTALUPPI (Pavia Univ.) just began a systematic-phyletic review of the Middle Liassic ammonite faunas in the Prealpi Occidentali. I. DIENI (Padova Univ.) has started a review of the Jurassic and Cretaceous rhyncholites, like the research delivered some years ago (U). N. FANTINI SESTINI (Milano Univ.) is currently working on the Liassic ammonites of the Prealpi Lombarde and recently she delivered a paper on Phricodoceras (Pliensbachian)

with three new species(5). G. PALLINI(Roma Univ.), in coauthorship (6, 18), studied Domerian-Toarcian ammonite associations in the Central Apennines, with two Toarcian new species. The same author (19) described the Tithonian ammonites in the pelagic facies of the Central Apennines. G. PAVIA (Torino Univ.), besides ending his research on the Lower Bajocian biostratigraphy of Digne, is working on the ammonites of lower Rosso Ammonitico Veronese (U. Bajocian - Callovian). G. TERRUZZI (Natural History Museum, Milano) is studying the Toarcian ammonites of Lombardia and Marche; his work on the Toarcian Frechiella, Paroniceras and Oxyparoniceras .of Passo del Furlo (Central Apennines) is in press. F. VENTURI (Perugia univ.) is currently working on the L'iasic ammonite associations of Umbria' and Marche; recently he published a research with the new genus Catriceras (21).

Echinoidea - N. MARIOTTI et alii (Roma Univ.) utilized Jurassic echinoids of Umbria and Marche as markers of sea-level changes (12). U. NICOSIA (Roma Univ.), in coauthorship (20), delivered a study on the stratigraphic and geographic distribution of Saccocoma tenella.

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Report No. 8

September 1980

REPORT TO THE INTERNATIONAL SUBCOMMISSION ON JURASSIC STRATIGRAPHY

From E Norling: Recent activities on the Swedish Jurassic

Swedish Jurassic rocks, as post-Palaeozoic rocks in general, are restricted to the south-western margin of the Fennoscandian Shield. The Jurassic is only known from the province of Scania and adjacent offshore areas. The Jurassic bedrock, covering a fairly large part of north-western and central Scania, is predominantly of Liassic age, whereas Middle and Upper Jurassic strata beneath the Quaternary are to be found only in minor areas restricted to some narrow troughs within the Fennoscandian Border Zone, and to the eastern margin of the Danish Embayment. As indicated by frequent borings, Jurassic strata are also present below the Palaeogene-Cretaceous cover in the Danish Embayment and in most troughs within the border zone on the mainland, and in the Baltic Sea and Kattegat as well. As exceptions should be noted the Bästads and Kristianstad Basins. As maximum thicknesses of Scanian Jurassic series may be given the following approximate figures:

Upper Jurassic	150-200 m	Mainly limnic and brackish Sediments, in certain areas succeeding marine Oxfordian.
Middle Jurassic	150-200 m	Thin marine top Middle Jurassic beds (in certain areas), succeeding limnic, partly coal-bearing Middle Jurassic
Lower Jurassic	500-600 m	Marine Lias succeeding deltaic, partly coal-bearing sediments of the Hettangian.

Micropalaeontology and biostratigraphy

Palynology. - Work by Dr Dorothy Guy-Ohlson, Swedish Museum of Natural History, Stockholm is concerned with Rhaetian, Lower and Middle Jurassic palynomorphs obtained from core drillings and other bores in north-western Scania. Recent publications deal with the Middle Jurassic, viz.:

- Guy-Ohlson, Dorothy, 1976: Additional palynomorphs from the Middle Jurassic of the Vilhelmsfält boring, southern Sweden. Stockholm Contrib. Geology 30:3.
- 1978: Jurassic biostratigraphy of three borings in NW.Scania (A brief palynological report). Sver. Geol. Unders. Rapporter och Meddelanden 11.
- 1979: A new species of Densoisporites (Weyland & Krieger) Dettman in the Jurassic of southern Sweden. Grana 18. Uppsala.

Another publication by Guy-Ohlson (manuscript datum 1980-09-03), entitled Rhaeto-Liassic palynology of Valhall No. 1 boring, NW. Scania, will be presented in 1981 in a special issue of Geologiska Föreningens i Stockholm Förhandlingar (GFF 103:2).

Along with the Swedish Jurassic, Guy-Ohlson has also been working on the New Zealand Jurassic. A recent publication (Fauna and Flora 74;6. 1979. Stockholm) concerns the Jurassic of Curio Bay.

Ostracoda.- Recent work by Dr U Sivhed, Geological Survey of Sweden (SGU, Lund) has mainly concerned Liassic faunas of western and north-western Scania and their stratigraphical bearing, Publications to be mentioned are the following:

- Sivhed, U., 1977: A Lower Jurassic ostracode fauna in the Gantofta Brick Pit, Skåne, southern Sweden.- Sver. Geol Unders. Ser C 730. Stockholm.

Sivhed, U., 1980: Lower Jurassic stratigraphy and ostracode faunas of western Skåne, southern Sweden. (Doctoral thesis). Sver. Geol. Unders. Ser Ca 50 (quarto), Uppsala.

Another publication by Sivhed on the Jurassic (manuscript datum 1980-09-03), entitled Geological outline of the Gantofta - Katslb'sa area in Scania, southern Sweden, will be published in a special issue of GFF (103:2, 1981).

Foraminifera.- Jurassic biostratigraphy, based on foraminifera, is handled by Dr E Norling, Geological Survey of Sweden, Uppsala. This work, currently carried out in connection with various activities including general and lithological-palaeogeographical mapping, correlation/ of offshore seismic stratigraphy, and gas storage prospecting, mainly concerns Lower Jurassic, top Middle Jurassic, and Upper Jurassic faunas. For information on Swedish Jurassic foraminifera see Norling, E., 1972; Jurassic stratigraphy and foraminifera of western Scania, southern Sweden. Sver. Geol. Unders. Ser Ca 47 (quarto), Stockholm.

Upper Jurassic foraminiferal biostratigraphy forms part of a publication by Norling (manuscript datum 1980-09-03) to be presented in a special issue of GFF (103:2, 1981). This work is entitled; On the Upper Jurassic and Lower Cretaceous geology of Sweden.

Other fossil groups.- The oldest oribatid mite hitherto recorded has recently been found in the Lower Sinemurian of NW. Scania, This find has been reported and described by Sivhed & Wallwork (1978) in Geol. Foren. Förhandl. 100, Stockholm.

Lithostratigraphy and palaeogeography

In connection with regional mapping of sedimentary rocks in Scania, and with lithological-palaeogeographical mapping forming a part of Project Tornquist (IGCP Accession No. 86), Swedish Jurassic lithostratigraphical units are currently revisionally treated and defined. As to the Upper Jurassic, the Swedish contributions by E Norling to lithological-palaeogeographical maps and accompanying descriptions have been submitted to Dr O Michelsen, Denmark, international compiler of Upper Jurassic maps of the whole project area.

Swedish contributions to Lower and Middle Jurassic lithological-palaeogeographical maps with descriptions for the same project, prepared by Norling, Guy-Ohlson, and Sivhed, will be ready for delivery in 1981. Those maps, including the Upper Jurassic ones, will be published in 1985 at the latest.

For improved knowledge about Jurassic distribution and facies changes in Sweden-Denmark and improved correlations in intervening marine areas, an increased cooperation between Danish and Swedish geologists and geo-physists will be necessary and most welcome. Such a cooperation could certainly be arranged within the subcommission.

General activities

In Sweden, the number of geologists and palaeontologists dealing with the Jurassic is very limited. Current stratigraphical and palaeontological activities (as well as sedimentology and structural geology) are mainly restricted to the Geological Survey (SGU, Uppsala, Lund), and to the Swedish Museum of Natural History, Stockholm (palynology).

Other studies, resulting in publications, concern radiometric datings of Jurassic basalts and palaeomagnetic research in Scania. These activities are carried out at the Swedish Museum of Natural History, Stockholm (Inger Klingspor), and at Lund University (G Bylund) respectively.

Marine geology and geophysics, partly concerned with the Jurassic, are mainly restricted to Stockholm University (T Flodén, M Kumpas, K Wannäs and others).

Among recent publications, giving general (and partly specific) information on the Swedish Jurassic, may be mentioned:

- Klingspor, Inger, 1976: Radiometrie age-determinations of basalts, dolerites and related syenite in Skåne, southern Sweden. Geol. Foren. Förhandl. 98, Stockholm.
- Kumpas, M., 1978: Distribution of sedimentary rocks in the Hanö Bay and south of Öland, S Baltic. Stockholm Contrib. Geology 31.
- 1979: Mesozoic development of the Hanö Bay Basin, southern Sweden. Geol. Foren. Förhandl. 101:4, Stockholm,
- 1980: Seismic stratigraphy and tectonics in Hanö Bay, southern Baltic. Stockholm Contrib. Geology 34:4.
- Norling, E., 1976; In Ringberg, B.; Beskrivning till jordartskartan Malmö NV Berggrunden. Pp 20-28. Sver, Geol. Unders. Ser Ae 27, Stockholm.
- 1978: In Daniel, E.; Beskrivning till jordartskartan Höganäs NO/ Hei singborg NV. Berggrund. Pp 20-32, 86. Sver. Geol. Unders. Ser Ae 25, Stockholm.
- 1978: In Gustafsson, O.; Beskrivning till hydrogeologiska kartbladet Trelleborg NO/Malmö SO. Den sedimentära berggrunden. Pp 13-22, 59-60. Sver. Geol. Unders. Ser Ag 6, Stockholm.
- Norling, E. & Skoglund, R., 1977: Der Südwestrand der osteuropäischen Tafel im Bereich Schwedens. Zeitschr. angew. Geologie 23:9. Pp 449-458. Akademie Verlag Berlin-DDR.



ENCLOSURE 5
for Newsletter No. 7

United States Department of the Interior

GEOLOGICAL SURVEY

E-501 U. S. National Museum
Washington D.C. 20560

KOPI

September 11, 1980

Dr. Olaf Michelsen
Geological Survey of Denmark
Thoravej 31, DK-2400
Copenhagen NV, Denmark

Dear Sir:

I have just completed a Professional Paper dealing with latest Jurassic (late Callovian and Oxfordian) ammonites in the Western Interior Region of the United States. I am now studying some Jurassic mollusks from the subsurface Jurassic of the southeastern United States. My papers awaiting publication include (1) Early Jurassic Ammonites from Alaska, (2) Late Jurassic Ammonites from Alaska, (3) Late Bajocian Ammonites from southern Alaska, and (4) Callovian and Bathonian ammonites from eastern Oregon. Recently published papers include Jurassic Paleobiogeography of the Conterminous United States in its Continental Setting (Prof. Paper 1062) and Middle Jurassic (Bathonian) Ammonites from Southern Alaska (Prof. Paper 1091). All of these papers, but particularly the last two, contain considerable stratigraphic and paleontologic information that makes possible fairly accurate correlations with both Eurasia and South America and show that some current ideas concerning paleogeography events need modification (see John Callomon).

In addition to their papers, Paul L. Smith is describing some Sinemurian and Pliensbachian ammonites from eastern Oregon for a doctoral thesis at McMaster University in Ontario, Canada. David Taylor is describing some Hettangian ammonites from eastern Oregon for a doctorate thesis at the University of California at Berkeley, California.

Sincerely yours,

Ralph W. Imlay
Ralph W. Imlay

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Neuchâtel, May 25, 1981