



*INTERNATIONAL UNION OF  
GEOLOGICAL SCIENCES  
COMMISSION ON STRATIGRAPHY*

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**SUBCOMMISSION ON DEVONIAN  
STRATIGRAPHY**

**NEWSLETTER NO.5**

January 1988



**I.U.G.S. Subcommittee on Devonian Stratigraphy**

**Newsletter No. 5, January 1988**

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U.K.**

### Editorial

The past six months has seen a great deal of research and conference activity around the Devonian world. The highlight has been the conference in Calgary. Our Chairman's Report for 1987 makes reference of course to that and to S.D.S. activities. We may feel pleased that the Subcommission's work makes such progress and that interest in it from the geological community does not diminish. Nevertheless there are reasons for some apprehension - at least in the U.K., Europe and North America - if not worldwide. Research funding in Britain has been much curtailed in recent years. The "big science" projects appear to command proportionally more finance than perhaps they should - at least when viewed from ground level on a Devonian outcrop where our science is still essentially observational rather than experimental. Britain's universities are experiencing a particularly worrisome time of it because the University Grants Committee, the body that apportions to each university its government support for the year, is reviewing all the earth science departments. The outcome of the review will be to reduce the number of such departments and to boost certain selected parts of the research effort in those that remain. There seems to be a distinct possibility that biostratigraphic palaeontology will fare poorly in comparison with the high-cost instrument-using areas. Palaeontological research itself may suffer something of a decline in consequence yet the annual meeting of the Palaeontological Association at Bristol in December 1987 had a programme crammed with excellent research papers. There was plenty there to commend the science to those who should judge its quality and the need for support.

Accurate correlation of strata remains a prime objective in geological research. Internationally accepted criteria, standards and means of achieving acceptable results and decisions are as critical as ever and there is much work still to be done in this connection. Inevitably, we may see the rate of progress diminish as funds run short, but enthusiasm for the task seems to maintain its impetus to judge from Calgary. The aims and work of the International Commission on Stratigraphy, and of its Subcommissions, may not be as well known as they should be and may not attract the public funding we would hope to see. It is up to every one of the Commission and Subcommission members to explain and champion our work whenever and wherever possible - and that Dear Reader, includes you!

D.L. Dineley

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Note: New publication of interest BLIECK, A., with Goujet, D. & Janvier, P. 1987 The Vertebrate Stratigraphy of the Lower Devonian (Red Bay Group and Wood Bay Formation) of Spitsbergen. *Modern Geology*, 11, 197-217.

### Abstract

Recent work on the Lower Devonian vertebrates collected during the 1969 French Expedition to Svalbard has provided new information and correlation of the Red Bay Group and Wood Bay Formations (Lochkovian to Emsian). Additions and revisions to the vertical distribution of the different genera are given, based on the new data and published taxonomy. Each biostratigraphic unit is characterised by its assemblage, viz. the Fraenkelryggen and Ben Nevis Formations, the Sigurdfjellet, Kapp Kjeldsen, Keltiefjellet and Stjørdalen Divisions. The age of the boundaries between these units is reassessed, and five different biozones are defined. The correlations are mainly made with other Arctic sequences (Canadian, European, Soviet). In conclusion, the whole sequence is proposed as a reference for the circum-arctic, vertebrate-bearing, Lower Devonian successions.

## ANNUAL REPORT FOR 1987

### Introduction

The specific accomplishments of SDS during 1987 were 1) co-sponsorship of the International Symposium on the Devonian System, Calgary, Alberta, Canada and 2) holding our 17th Field and Business Meeting.

### International Symposium on Devonian

The second Calgary International Symposium on the Devonian System was held August 16-20, and was preceded and followed by a number of field trips in western Canada. The Symposium was organized and run by the Canadian Society of Petroleum Geologists (CSPG); at the Society's request, SDS was co-sponsor.

The meeting was very successful. There were 40 half-day sessions of papers (in 7 half-days) plus poster presentations and exhibits. Attendance was reported to be in excess of 1300. All aspects of the Devonian were examined, with an emphasis on biogeography and biostratigraphy. Numerous SDS members gave papers and/or served as session chairmen.

SDS held an evening "open meeting" at which we made short presentations on current work and decisions and answered questions. Some 25 non-SDS specialists attended and discussions lasted more than two hours. A hand-out was prepared and distributed, showing SDS decisions to date.

### 17th Field and Business Meeting

The SDS Business Meeting was held in Calgary on August 21 and 22, immediately following the Symposium sessions. The meeting was publicized at the Symposium and all interested specialists were invited to attend. The Business Meeting was followed by a 4-day SDS field trip (August 23-26) to Devonian localities in the Canadian Rockies, west and northwest of Calgary.

Present at the Business Meeting were 16 (of 20) Titular Members, 15 (of 45) Corresponding Members, and 11 or more guests. This is the largest member attendance of any Business Meeting to date, and the largest non-member attendance of any meeting not held concurrently with a major symposium or congress. Timing the meeting to immediately follow the Symposium permitted us to hold a full-fledged meeting while taking advantage of the attraction of the Symposium to our members. All local arrangements were made by TMs Dr. A.E.H. Pedder, who served as SDS liaison to the CSPG Organizing Committee, and Dr. A.W. Norris, both of the Institute of Sedimentary and Petroleum Geology (ISPG, Geological Survey of Canada), Calgary. Throughout, they were well supported by the ISPG, Dr. W.W. Nassichuk, Director. The meetings were held in the Senate Room, University of Calgary. Arrangements for this were made

through Dr. B.S. Norford, ISPG, former Chancellor of the University. All arrangements were excellent and contributed significantly to the success of the meeting.

### Stage Boundaries

Principal business was the discussion of the position and potential stratotypes for the four undefined stage boundaries. Considerable progress is being made and it is considered likely that we can achieve consensus on the points by the time of the 1989 IGC.

Frasnian/Famennian. A position for this boundary was selected in 1987, but further studies suggested that this decision should be reconsidered because of new information on the timing of the F/F extinction event. After discussion, it was agreed to reconsider by a vote of 23 yes, 1 no, and 4 abstentions. Three possible positions were then discussed. The base of the Lower Palmatolepis triangularis (conodont) Zone was selected by the following vote; TMs 9: 3: 2; CMs 12: 1: 0. The principal argument for this position (down from the 1983 Middle triangularis Zone) was that this was the earliest, widely recognized marker, following the event.

Several potential stratotypes had been discussed at the 1986 meeting; formal proposals for five were presented and discussed at length. These were in Belgium, China, France, Germany and the USA. The Coumiac section in the Montagne Noire, southern France, was favored as follows: TMs 9: 3: 4; CMs 11: 2: 3.

These decisions will be put to a mail vote of SDS after distribution of the Calgary minutes and all discussion papers.

Lochkovian/Pragian and Pragian/Emsian. The focus of our 1988 Field Meeting is to be on these boundaries and on potential stratotypes in northeastern Spain (Guadarrama area) and western France (Brittany); note that our 1986 meeting had similar focus in Czechoslovakia and that the boundaries have been under discussion and study by SDS for many years. It was agreed that no formal vote would be taken before 1988, but the positions of both boundaries were extensively discussed. It was recommended that the L/P boundary be within the interval marked by the first appearance of Eognathodus sulcatus (conodont) and Nowakia arcuaria (dacryoconarid). A motion to this effect passed as follows: TMs 15: 0: 0; CMs 9: 0: 0. It was also recommended that the P/E boundary be within the range of overlap of Polygnathus pirenae and P. dehiscens (conodonts) but that other position should be considered. A motion to this effect was passed as follows: TMs 13: 2: 0; CMs 9: 0: 1.

Eifelian/Givetian. Study of this boundary continues, but is complicated by extreme differences in facies and operational (traditional) definitions within western Europe. After discussion, it was recommended that Devonian workers focus on the interval from the base of the P. ensensis Zone to the base of the P. varcus Zone. This was approved as follows: TMs 12: 0: 0; CMs 11: 0: 0.

Stratotypes. All of the traditional type areas of the four stage boundaries and several potential stratotypes in other areas have been visited

by the Subcommittee. Formal proposals for stratotypes are expected within the next two years.

#### 1988 Meeting

During the year, three regions in the USSR (Timan, S. Urals, and Fergana) were proposed as possible sites and then withdrawn for logistical reasons. At the same time, three sites in France and Spain were proposed. Two of the Soviet and all of the France/Spain sites had been discussed at the 1986 meeting. It was decided to combine two of the proposals and hold a 10-day field meeting in northeast Spain (to be organized by CM P. Carls) and Brittany (organized by CM P. Morzadec), followed by a 2-day Business Meeting in Rennes.

#### Membership

It was noted that CM Brouwer resigned, and CM Drot died during the year. Six new CMs were unanimously elected; three of these were nominated before the meeting and elected at the beginning so that they could participate as members in all deliberations. SDS membership now stands at 20 TMs and 48 CMs. A new membership list will be distributed when ready.

#### SDS Newsletter

This was expanded during the year and its use as a means of extending discussions of current SDS problems was markedly increased. Further increase is expected this year. Two numbers were produced and distributed (#3, January; #4, June) under the editorship of SDS Secretary TM D.L. Dineley.

#### Miscellaneous

Reports on activities in three areas were received and discussed:

- 1) Marine-Nonmarine Study Group. Report and Discussion by CM A. Blicek (Lille) who informally proposed the East Baltic succession as a reference standard for vertebrate dominated sequences. A report by Blicek, Mark-Kurik and Mårss, distributed to members present in Calgary, is expected to be published.
- 2) Working Group on the Devonian-Carboniferous Boundary. Information report by TM W. Ziegler.
- 3) South American activities. Contents of a brief report by TM M.A. Hünicken, Argentina, were presented. A more detailed report on IGCP Project 193 will be distributed later.

#### Field Trip

The Business Meeting was followed by a 4-day field trip (August 23-26) organized by TMs Norris and Pedder (ISPG, Calgary) and led by H.H.J. Geldsetzer and B.C. Richards (ISPG, Calgary) in addition to the organizers. A Guidebook (Norris and Pedder, eds.; 1987) was produced by the GSC and in this and many other ways the trip was financially and logistically supported by the ISPG, GSC.

The trip was largely in the Upper Devonian with some emphasis on the M/U Series boundary and the F/F Stage boundary. Sections near Exshaw (west of Calgary) and in Jasper National Park (northwest of Calgary) were visited and discussed. None are under consideration as boundary stratotypes but they were used to show the stratigraphy of an important Devonian area and were especially pertinent as examples of the effect of recent SDS decisions. The trip ended in Calgary, on the evening of the 26th with a very memorable banquet.

#### Bibliography (SDS Products)

##### Published:

1. Dineley, D.L., ed., 1987. SDS Newsletter no. 3 (January), and no. 4, (June), 14 + 8 pp.
2. Klapper, G., Feist, R. and House, M.R., 1987. Decision on the boundary stratotype for the Middle/Upper Devonian Series boundary. Episodes, 10(2), p. 97-101.
3. Norris, A.W. and Pedder, A.E.H., eds., 1987. Devonian of Alberta Rocky Mountains between Banff and Jasper: SDS (by GSC), 85 p.
4. Weddige, Karaten, 1987. The lower Pragian boundary (Lower Devonian) based on the conodont species Eognstodus sulcatus. Senckenbergiana lethaea, 67(5/6), p. 479-487.
5. Werner, Rolf and Ziegler, Willi, eds., 1987. Neue daten zur biostratigraphie, paläogeographie und paläontologie des Devona in Eurasien und Australien. Cour. Forsch.-Inst. Senckenberg 92, 274 p.

##### Internal Reports:

6. Alberti, G.K.B., Chlupac, I., Lardeux, H., and Lukes, P., 1987. Comments on the significance of dacryoconarid tentaculites for the identification of some Lower and Middle Devonian boundaries. Circulated by mail, 13 July 1987, 3 p.
7. Blieck, A., Mark-Kurik, E., and Märss, T., 1987. Biostratigraphical correlations between Siluro-Devonian invertebrate dominated and vertebrate-dominated sequences: the East Baltic example. Submitted to SDS in Calgary, August 1987, 13 p. + 7 figs.
8. Rultynck, P., 1987. Three charts showing distribution of conodonts across Eifelian/Givetian boundary in Morocco and Belgium. Submitted in Calgary August 1987; to be published in 1988.
9. Feist, R., Becker, R.T., House, M.R., Klapper, G., and Price, J.D., 1987. Stratotype proposal for the Frasnian/Famennian boundary in the Montagne Noire. Paper submitted in Calgary, August 1987, 13 p.
10. House, M., 1987. Early devonian goniatite faunas and their bearing on the definition of the base of the Emsian. Circulated by mail, July 1987, 4 p.

11. House, M., and Chlupac, I., 1987. Goniatite faunas relevant to the definition of the Eifelian/Givetian boundary. Circulated by mail, July 1987, 14 p.
12. Jaeger, H., 1987. Letter to Chairman outlining Jaeger's choice of graptolite boundaries in the Lower Devonian. Circulated by mail, 13 July 1987, 3 p.
13. Jia Hui-chen, Xian Si-yuan, Yang De-li, Zhou Hui-lin, Hang Ying-jian, Chen Zhen-huan, Wang Jing-xing, Wang Rui-gang, Wang Shi-tao, Zhang Zhen-xian, and Wei-ming, 1987. Proposal of Frasnian/Famennian boundary section as candidate for a boundary stratotype in Guangxi, South China. Paper submitted in Calgary, August 1987, 15 p., 4 pls.
14. Muroby, M.A., 1987. Nevada: The potential for a Lochkovian-Pragian stratotype. Paper submitted in Calgary, August 1987, 15 p.
15. Sandberg, C.A., Ziegler, W., and Dreesen, R., 1987. Frasnian/Famennian boundary and stratotype, a proposal to SDS. Paper submitted in Calgary, 4 p., 5 figs.
16. Streef, M., Vanguetstaine, M., Dreesen, R., and Thorez, J., 1987. Palynology (Acritarchs and miospores) of the "Barren black shale" near the Frasnian/Famennian boundary level at Hony (Belgium). Paper submitted in Calgary, August 1987, 6 p.
17. Struve, W., 1987. Letter to SDS with comments on the bases of ensensis, varcus and otomari zones for the base of the Givetian. Circulated by mail, 13 July 1987, 3 p.
18. Walliser, O.H., 1987. Proposal for potential boundary stratotypes for the Frasnian/Famennian and Eifelian/Givetian boundaries. Paper submitted in Calgary, August 1987, 4 p.
19. Walliser, O.H., 1987. Boundary stratotypes in different facies realms. Circulated by mail, 13 July 1987, 2 p.
20. Weddige, K., 1987. On defining the Pragian boundary of the Lower Devonian. Paper submitted in Calgary, 6 p. (Advance copy of published Weddige, 1987).
21. Yolkin, E.A., 1987. A photograph of the Madmon and Khodzshakurgan formations in the Zinzilhan gorge, central Asia, showing occurrences of P. pirenene and P. dehiscens. Circulated in Calgary 22 August 1987. (Supplement to 1978 Field Meeting guide.)

## 1988 SUBMISSIONS

The 1988 Business Meeting will be held in Rennes, during August (see meeting announcement). Numerous discussion papers and formal stage-boundary submissions are expected. To insure maximum distribution before the meeting, I suggest the following:

Discussion papers should be prepared as camera-ready copy, single spaced on paper that is approximately 21 x 28 cm. These should be submitted to Dave Dineley for inclusion in the SDS Newsletter, well before the Newsletter deadline. It will help if a xerox copy is mailed to me so that I can use it in preparing for the meeting.

Formal submissions should be prepared in the usual detail and distributed to the complete SDS mailing list (almost 80 names) by the author(s). If this is not possible, then bring 30 copies to the meeting and ship the rest to Dave for distribution with the minutes. However, I emphasize that members cannot really absorb your submission while at the meeting. For serious consideration it must be available in advance. This was mentioned by several members in Calgary.

I will not be able to help with the distribution of either discussion papers or formal submissions this year. I do want to know the views and opinions of all members, but if they are for the whole membership, they must be prepared for the Newsletter or distributed by the author. I expect to leave Washington about July 1, and may not return before the August meeting. Please prepare and distribute submissions early.

## ELECTION OF SDS OFFICERS FOR 1989-92

According to the ICS Statutes, Subcommittee officers are nominated by the titular members of the Subcommittee at least nine months before the Commission's regular meeting. They are then elected by the Commission and ratified by the IUGS Executive Committee. The next ICS meeting is in July 1989 so our deadline for submitting nominations to the ICS is October 1988.

I have asked TM Willy Norris to form a 2- or 3-person Nominating Committee to poll the TMs and submit a report by the time of our Rennes meeting. Suggestions for nominees for Chairman, Vice-Chairman and Secretary will be welcome from CMs as well as TMs and should be sent to Willy at his Calgary address:

Dr. A. W. Norris  
Institute of Sedimentary and Petroleum Geology  
3303 33rd Street, NW  
Calgary, Alberta T2L 2A7, Canada

W.A. Oliver, Chairman SDS

Investigations for palynomorphs near the Frasnian/Famennian boundary level in La Serre C section near the Coumlac section (Montagne Noire, France)

M. VANGUESTAINE

Samples were taken during the SDS excursion in the Montagne Noire in 1983.

Five pyritic bituminous shales were collected in trench C of La Serre (Stop 14, p.55 in FEIST, 1983; stop 6, p.45 in FEIST & FLAJS, Ed., 1987) dugged south of Cabrières (fig. 1 in PRICE & HOUSE, 1983; fig. 30 in FEIST & FLAJS, 1987).

These samples do not contain palynomorphs.

They were taken between bed 6 and 15. Beds 13 to 16 cover, after KLAPPER (personal communication, 1983), the range of "uppermost gigas to upper triangularis or lower crepida.

The La Serre C section is compared with the Coumlac section on fig. 43 in FEIST & FLAJS (Ed.); 1987 where the presumed corresponding shales are not exposed.

Feist, R., 1983 The Devonian of the Eastern Montagne Noire (France). Guidebook, I.U.G.S., Field Meeting.

Feist, R. & Flajs, G., 1987 (Ed.). Devonian and Carboniferous of the South Eastern Montagne Noire. Guidebook, I.U.G.S., Field Meeting.

Price, J.D., & House, M.R., 1983 Notes on goniatites from near the lower and upper limits of the Frasnian (Upper Devonian) of the Montagne Noire in Lardeux, H. (Ed.), Reports, I.U.G.S., SDS Meeting in Montagne Noire (France).

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Editor's Note A new important publication:-

Streel, M., Higgs, K., Loboziak, S., Riegel, W. & Steemans, P. 1987 Spore stratigraphy and correlation with faunas and floras in the type marine Devonian of the Ardenne-Rhenish regions. Review of Palaeobotany and Palynology, 50, 211-229.

Abstract

A spore zonation scheme comprising fifty-one zones is proposed for the marine Devonian strata of the Ardenne-Rhenish regions of Western Europe. The zonation comprises a series of Opper and interval-type zones and these are closely intercalibrated with the associated marine faunal zonation to give a seventy-five level scale of correlation for the Devonian succession. The spore zonation provides stratigraphical dating of the Devonian megaflores of the region, particularly those from the Lower and Middle Devonian. The proposed spore zonation is closely compared with that erected for the Devonian of the Old Red Sandstone Continent.

Two Proposals from TM Yu Chang-min and CM Ruan  
Yiping of the Nanjing Institute of Geology and  
Palaeontology

By considering the stratigraphic development of the Lower Devonian in the classical area of the Ardeno-Rhineland and the Barrandian area and correlating with the South China Lower Devonian sequence, the proposal is made to select a new level at the base of the *Nowakia praecursor* Zone or approximately at the base of the conodont zone tentatively referred as the base of *dehiscens-perbonus* Zone for the base of the Emsian.

With regard to the absolute time duration of the Emsian in comparison with the Pragian and Lochkovian, and to the contents of the biotas and to stratigraphic development, it is suggested that the Lower Devonian be appropriately subdivided into four stages rather than into three. The base of *inversus* Zone and its counter part is appropriate to be selected as the base of the Upper Emsian (fourth stage).

A plea from the editor

News of the activities of members of the Subcommittee and of other research and researchers in Devonian matters is more than welcome on these pages. Please send items of interest to the editor as soon as they occur. Some Subcommittee members have promised to provide brief accounts of the research in their countries; this is very good but more is needed, likewise citations of new and useful references that not all readers might otherwise be aware of.