

Bulletin
OF THE
Geological Society of China

Volume Second
Number 1-2

Published by the Society

Ping-Ma-Ssu 9.

Peking

1923

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BULLETIN OF THE GEOLOGICAL SOCIETY OF CHINA

PROCEEDINGS OF THE FIRST ANNUAL MEETING
OF THE GEOLOGICAL SOCIETY OF CHINA, HELD AT
PEKING, JANUARY 6, 7, AND 8, 1923.

BY C. Y. HSIEH, SECRETARY*

Morning Session of Saturday, January 7.
President H. T. Chang in the Chair

The first session of the meeting was called to order at 10 o'clock a.m., Saturday, January 6 in the Library Building of the Geological Survey of China, Peking by President Mr. H. T. Chang. After the Secretary Mr. C. Y. Hsieh read the minutes of the last meeting, President Mr. Chang representing the Council reported briefly the proceedings of the last year of the Society and then he introduced the following administrative reports to the members.

SECRETARY'S REPORT

To the Council and Members of the Geological Society:

Secretaryship:—During the absence of the Secretary in June and October the duties of the office were efficiently discharged by Mr. P. L. Yuan, Secretary pro tempore.

Meetings:—During the year past this society has held five general meetings in the Library Building of the Geological Survey of China, Peking. Altogether about twenty three communications, lectures and addresses were delivered at the general meetings by members of the Society. The proceedings of the each meeting have been printed in the Bulletin of the Society.

Membership:—In spite of the fact that this Society has only been recently organized, our membership has grown very steadily. Thus, we had only twenty six charter members, the membership increased within three months after its organization to nearly sixty. The present enrollment of the

* Partly recomposed by Editor:

Society is sixty eight fellows and nine associates making a total of seventy seven. It is interesting to note that this Society is really quite a cosmopolitan one. Among our foreign members, there are ten Americans, five Swedes, three natives each of Russia, France and Great Britain, two Japanese and one native each of Belgium, Czecho-Slovakia and Austria.

Respectfully submitted,

C. Y. Hsieh,
Secretary.

TREASURER'S REPORT

To the Council and Members of the Geological Society;

Besides the tabulated report herewith submitted, I beg to inform you that a monthly donation of one hundred dollars beginning from September, 1922 has been promised to offer to the Society by the Ministry of Agriculture and Commerce; but it will not be received probably until end of January, 1923.

Receipts

Fellowship dues, 1922	\$220.00	
Life-member dues	60.00	
Associate dues, 1922.....	<u>12.00</u>	
		<u>292.00</u>

Expenditures

Secretary's Office: —

Administration (including printing circulars).....	\$24.096	
Postage.....	<u>8.00</u>	
		32.096

Treasurer's Office: —

Administration (including printing, receipts and circulars).....	15.80	
Postage	<u>4.00</u>	
		19.80

Expenses for General meetings:—

1st meeting.....	\$39.54
2nd „	18.01
3rd „	11.75
4th „	8.876
5th „	9.29
	87.466
Miscellaneous (as table cloth, cups, dishes, spoons etc.).....	38.525
Total	177.877
Balance	<u>114.113</u>
	<u>292.00</u>

Respectfully submitted.

H. T. Lee

Treasurer Elected

T. I. Loo

Treasurer pro tem.

AMENDMENT OF THE CONSTITUTION

A memorandum for the amendment of the Constitution *Article 3* was submitted by W. H. Wong, A. W. Grabau, C. Tung, L. F. Yih, Y. C. Sun and C. Y. Hsieh. It was passed and adopted. The amendment reads as follows:—

B. As associates: college students of good standing in the studies of geology and its allied sciences; and others actively interested, though not necessarily professionally engaged in geology.

PRESIDENTIAL ADDRESS

President Mr. H. T. Chang then gave his Presidential Address entitled "The Beginning of the Using of Zinc in China". An English translation was read by Mr. P. L. Yuan. The full paper will be published in the bulletin.

ELECTION OF OFFICERS

The Secretary declared the election of officers for 1923 as follows, the ballot having been conducted in accordance with the constitution.

President

V. K. Ting (丁文江)

Vice-Presidents

J. S. Lee (李四光)

W. H. Wong (翁文灏)

Secretary

C. Y. Hsieh (謝家榮)

Treasurer

T. I. Loo (盧祖蔭)

Councilors

(1923-1926)

H. T. Chang (章鴻釗)

L. F. Yih (葉良輔)

(1923-1924)

P. L. Yuan, (袁復禮)

to succeed V. K. Ting.

The meeting adjourned at 12:30 after a group picture was taken.

Afternoon Session of Saturday, Jan, 6.

Vice-President, W. H. Wong in the Chair.

The meeting was reconvened at 2 o'clock. The following papers were read and discussed.

THE STRATIGRAPHY AND STRUCTURE OF EASTERN YUNNAN*

V. K. TING

Discussed by Dr. A. W. Grabau.

SUBDIVISIONS OF THE JURASSIC

COAL DEPOSITS OF THE MARITIME PROVINCE OF RUSSIA*

E. AHNERT

Read by title.

SOME REMARKS ON THE FAMILY, FUSULINIDAE*

J. S. LEE

Read by title.

* The paper has not yet been received by Editor

NOTES ON THE RED BEDS IN KANSU

C. Y. HSIEH

(Abstract)

The red beds in Kansu are mainly composed of red or brown sandstones and clayey shales intercalated with gray or white sandstones, conglomerates and at one place a thin layer of fossiliferous and calcareous shale. Gypsum, either in original thin beds or in secondary crystals and veinlets, is always present. There are many instances which show that the red beds have also a rich content of salt. For example, the water flowing out at the outcrops assumes somewhat the nature of a brine.

The superposition of red beds varies at different localities; thus, in the tract between Lan Chow (蘭州) and Si Ning (西寧), they overlies the Archaen gneiss unconformably while along the great Nan Shan range the red beds are found unconformably overlying the Nanshan Sandstone. The red beds are also found to associate with other formations such as the lower Palaeozoic sediments and the Carboniferous coal series, exhibiting sometimes quite complicated structures. The dip of the beds varies very much; it ranges from almost horizontal to as much as 45 degrees.

Fossils of gastropoda and fishes were found in two places; the first locality called Sze Kou Tsze (寺口子) is situated to the northwest of Kuo Yuan Hsien (固原縣) and the second locality named Wu Tsun Pu (五村鋪) is situated to the southeast of Hua Ting Hsien (華亭縣). The red beds expose at Sze Kou Tsze are quite disturbed, forming a series of anticlines and synclines while the whole series overlies disconformably the Lungshan (隴山) Formation which is probably of lower Palaeozoic age. The fossiliferous bed is a gray colored shaly limestone, not more than two feet in thickness. In this horizon I found numerous casts of small gastropoda and many opercula which are very similar to those collected some years ago by Dr. J. G. Andersson in Yuan Chu Hsien (垣曲縣), southern Shansi and also similar to those recently collected from central Shantung by the same geologist, they are all of Eocene age.

Although the determination of these fossils can only be regarded as provisional, it appears quite true that there are in Kansu province two kinds of red beds of similar lithological characters, but of different geological ages so

far as being indicated by the fossils found. It is probable that the extensive exposures of the red beds seen in the central and northwestern Kansu must represent formations of various ages, ranging probably from Jurassic to Tertiary. Loczy and Obrutschew had grouped all these red beds under the Pliocene age. Their view then will no longer remain true.

FOSSIL FISH COLLECTION IN NORTH CHINA

C. TUNG

(Abstract)

The occurrence of fossil fishes has been well known for many years past. Those found by H. M. Becher in Lai Yang Hsien (濰陽縣), Shantung, were determined by A. S. Woodward as *Lycoptera sinenses*. In the same region Mr. H. C. Tan made a good collection some years ago.

In 1919 Mr. T. O. Chu found some smaller fossil fishes at Chow Yang (朝陽) and Ling Yuan (凌源) in Jehol. Last year when I was in that region, I also did some collecting work there.

In the latter part of 1921 when Mr. C. Y. Hsieh passed through Shensi and Kansu for the investigation of earthquake effects, he has collected some fossil fishes which are almost of the same species as those found in the two regions mentioned above.

Thus it is clear that the fish-bearing horizon of the same geological age once extended far and wide.

In Jehol where I did the collecting work, the strata consist of interbedded shales, sandstones, slates, and conglomerates. The fossil fishes are found in a whitish shale lying unconformably on siliceous limestone and gneiss. In the northwest of Chow Yang Hsien there are coal seams below the whitish shale.

The fishes I collected are rather small in size. The largest reaches only about four inches. The head is large, about one inch long. The small teeth can be clearly traced. The position and the sizes of pectoral fin, pelvic fin, anal fin, and caudal fin show that they belong to the genus *Lycoptera*. There are ten rays in the dorsal fin, fourteen rays in the anal fin, and more than forty vertebræ which near the caudal fin become smaller and turn upwards. This is the Siberian species, *Lycoptera middendorfi*.

The fishes collected by Mr. Tan in Lai Yan Hsien are embedded in a greenish gray, fine-grained and hard shale. Their heads are comparatively small. The number of vertebrae is very indistinct. The general features are the same as those of *Lycoptera sinenses* described by Woodward, but the head is not so long as Woodward mentioned.

The fishes collected by Mr. Hsieh in Shensi and Kansu are also embedded in a greenish gray shale. The size varies and the largest one measures up to four and half inches. The head is small, less than a quarter of the total length of the body. There are twelve rays in the dorsal fin, sixteen rays in the anal fin, and about forty five vertebrae. Near the tail where the vertebrae turn upward, the number of the latter is indistinct. The imprints of scales are very clear.

The smaller varieties are two inches long and their heads are correspondingly small. There are fourteen rays in the anal fin, and the vertebrae bend upward nearly to the end of the caudal fin; the other characters are as same as those mentioned above.

As *Lycoptera* is a common Jurassic fossil, it is, therefore, still an open question whether the fish-bearing bed in Shensi, Kansu, and Shantung is of upper, middle, or lower Jurassicage.

CAVITIES AND CAVITY-FILLING IN IGNEOUS ROCKS,
WITH SPECIAL REFERENCE TO CERTAIN ROCKS IN CHINA*
FRED. K. MORRIS

THE TSI NAN INTRUSIVE
G. B. BARBOUR

Discussed by J. G. Andersson, W. H. Wong, J. S. Lee and E. T. Nystrom. The full paper will be published in the bulletin.

RECENT PROGRESS IN GEODETIC RESEARCH*
P. L. YUAN

The meeting adjourned at 5 p.m.
Annual Dinner

At 8:30 p. m., Saturday, January 6, the society assembled for its annual dinner in the Dining Room of the Peking Hankow Railroad Station. Forty three members and guests were present, including a number of ladies.

* The paper has not yet been received by Editor.

Dr. V. K. Ting, the newly elected president of the Society, was the toastmaster of the evening. Speeches were made by Messrs. H. T. Chang, C. Y. Wang, J. G. Andersson, W. H. Wong, F. K. Morris, Davidson Black and A. W. Grabau. Their topic was the contribution of different nations to the foundation of our knowledge of Chinese geology.

Morning Session of Sunday, January 7.

The Sunday morning was devoted to the demonstration of new collections of the Hipparion fauna of Pao Te Hsien, Shansi and the fossil plants from the Palaeozoic and Mesozoic beds of Shansi in the Museum of the Geological Survey of China by Dr. O. Zdansky and Mr. E. Norin respectively.

Afternoon Session, January 7.

Vice-president, Dr. W. H. Wong in the Chair.

The meeting was reconvened at 2 o'clock and the following papers were presented and discussed.

THE RECENT INVESTIGATIONS IN TSIN LING SHAN*

L. WANG

Read by title.

THE CONSTITUTION OF COAL

C. Y. WANG

Discussed by Dr. A. W. Grabau and Prof. F. K. Morris. The full paper will be published in the bulletin.

THE HOT SPRING REGION NEAR SAINOIN HAN, MONGOLIA.*

FRED. K. MORRIS

THE CAVES OF THE MORAVIAN KARST*

COL. MILOS HESS

THE GEOLOGY OF THE MEN YING (蒙陰) AND LAI WU (萊蕪) VALLEYS
IN SHANTUNG

H. C. T'AN

The full paper will be published in the bulletin.

OUTLINES OF THE YOUNGER MESOZOIC AND TERTIARY HISTORY
OF NORTHERN CHINA*

J. G. ANDERSSON

Discussed by Prof. F. K. Morris and Dr. V. K. Ting.

* The paper has not yet been received by Editor.

A NEW FACIES OF THE ORDOVICIAN IN SHANSI*

T. C. WANG

Read by title.

WHAT IS A SHANTUNG*

A. W. GRABAU

The meeting adjourned at 5. p. m.

Evening Session, January 7.

Vice-President Dr. W. H. Wong in
the Chair.

The meeting was reconvened at 8 p. m. and the following papers
were read and discussed.

ON SOME HORIZONTAL DISPLACEMENT AND THEIR
RELATION WITH THE TECTONICS IN NORTHERN CHINA*

W. H. WONG.

Read by title.

CONTRIBUTIONS TO THE PALÆONTOLOGY AND STRATIGRAPHY OF THE
FAR EAST MADE BY RUSSIAN GEOLOGISTS SINCE 1917

A. N. KRYSHTOFOVICH

(Abstract)

Investigations were confined to the south Amurland, Sakhalin Island
and the three eastern provinces of China besides some work was done over
Japanese material collected by other geologists.

In study of the Palæozoic strata a discovery of the Devonian fauna
was made at Erh Tsin Tsiang Sze in Manchuria by E. Ahnert and on Lower
Amur (Evaron Lake district) by late P. Pazausky. Still more interesting is
the discovery of the Permian Cordaites near Vladivostok by N. Eldashevich
and consequently the Spirophyton-beds of Wittenburg, which were formerly
regarded as the lower Jurassic strata, now are known to be of Permian age.

In study of the Mesozoic, a detailed survey of the Jurassic coal-
bearing strata of the southern maritime province has been made by
Mr. Eldashevich and others. These strata are divided by A. N. Kryshstofovich
into two series: the lower one is called "Mongugai" Series, having the
following plant fossils:

Neocalamites carrerei (Zeill.)

Clathropteris meniscioides (Goep)

Hausmannia ussuriensis Krysh.

* The paper has not yet been received by Editor

And the upper series is called "Nikanian Series", ranging probably from middle Jurassic to Wealden in age. The leading fossils of this series are as follows :

Onychiopsis elongata (Geyl.)

Sagenopteris cf. mantelli Schenk

Dioonites kotoi Yokoyama

A well preserved fossil "flower" of *Williamsonia* sp. was found in the latter series near Vladivostock. A kind of peculiar coal called Chabdo-pissite by Kryshstofovich was also found rather close to the Sin Wen Ho near the railroad station, "Lipovsky". It mostly consists of needles of translucent resin, being the content of the resin-vessels of some wood.

The Cretaceous strata in the Sakhalin Island were studied by P. Polevoy and A. N. Kryshstofovich, 1917-1922. There are three series, viz., Orokian, Giliakian and Ainuan, ranging from Cenomanian up to Senonian, being partly characterised by fauna and largely by a flora much resembling that of the Dakota Group and that of Greenland.

In 1917 continued excavations of Dinosauria bones on the right bank of the Amur river near Pashkovo suggested the occurrence of the upper Cretaceous strata. They are mostly Praedentata. Another interesting fact is the peculiar flora showing transitional character (Cretaceous-Tertiary), which was found on the Bureya and Amur river, to be different from the usual Tertiary flora of eastern Asia, for example, as in Fushun.

The description of a petrified stem of *Cycadeoidea egouna*, n. sp. from Hokkaido, Japan by A. N. Kryshstofovich seems to be also an important contribution.

Concerning the study of the Tertiary strata of the Sakhalin Island and the Ussuriland, it should be mentioned that some remarkable materials on the stratigraphy in Sakhalin and the publications on the local floras such as the flora of Amagu River and Possvet on Russian territory have been published with the attempt of correlating them with those collected from abroad.

Among the Tertiary floras of Sakhalin there are two index fossils, characterising very well the horizon, viz.,

Trapa borealis Heer

Comptonia cf. acutiloba Heer.

A. N. Kryshstofovich has also described several collections of the Tertiary plants from Japan (Bibai in Honnaido, vicinity of Sendai, Takashima, Alurado etc.). Included in the collections is the palm, *Sabal nipponica*. While it was discovered simultaneously in the southern-most and northern-most localities the palm of Sendai remained specifically undetermined. All these collections and also some others have been described and correlated. A great many materials have been collected from Corea (Chang Gi) since 1917. Surely they will yield many interesting facts after being properly studied.

UPPER CAMBRIAN OF THE KAIPING BASIN

Y. C. SUN

Discussed by Dr. J. G. Andersson and Mr. Barbour.

UPPER CAMBRIAN FOSSILS FROM FENGTIEN

Y. C. SUN

The above two papers will be published in the bulletin.

THE DEVONIAN OF CHINA

A. W. GRABAU

(Abstract)

Contrary to opinions formerly held, it has now become fairly evident that lower Devonian sediments are unknown in China, that indeed, none are found nearer than Altai Mountains on the north and Besphorus on the West. China having been cut off from the rest of the world since early Silurian time was reinvaded by European seas at the beginning of Middle Devonian time, the period generally known as the Eifelian in Europe and the Ulsterian in North America. This invasion was by way of the ancient Himalayan geosyncline, for in the strata of the Himalaya mountain the records of such an invasion are still clearly traceable.

China at this time as throughout most of the Palaeozoic was an enclosed basin of which northern Indo-China was a part. On the south and east it has been bounded by the old land of "*Cathaysia*," which at this time included the islands of the East Indies and Japan. No connection with the Pacific or the Indian oceans existed, China's sole communication with the outside world was through the Himalayan water-way.

This early Middle Devonian invasion covered only a small portion of the South China basin, nor did it cover other parts of Asia to any great

extent. There is no evidence that the Mongolian geosyncline, that important water-way across Asia, during subsequent epochs of the Palæozoic, was then in existence. In the next epoch of the Middle Devonian, however, the Givetian of Europe or Erian of North America a much more pronounced transgression of the sea was inaugurated. This is generally known as the Kuen Lun transgression, for the Tien Shan and Kuen Lun geosynclines, now converted into the Tienshan (and Kuen Lun Ranges were then flooded for the first time. Through them the European waters entered the Mongolian geosyncline, the present site of operation of the Third Asiatic Expedition. This was the water way across Asia through which *Stringocephalus hortini* and its associates migrated from Europe, their center of disposal, to western North America, and it was a water-way which remained open throughout the remainder of Devonian time.

It was not until the beginning of Upper Devonian time, that the northern water-way into the Chinese basin came into existence.

At that time, the southern or Himalayan water-way appears to have become closed, probably through a slight rise of the land. North of Tibet, however, the Nan Shan Geosyncline, the site of the present Nan Shan ranges, permitted ingress to the Chinese basin, and through it the early upper Devonian or Frasnian fauna of Europe entered Chinese waters. Here it met the survivors of the Middle Devonian faunas which in this nearly enclosed basin had lived a life of isolation. Virtually cut off from the outer world, this organic assemblage followed its evolutionary bend and so a distinctive fauna had come into existence, related to, yet different from, its contemporary faunas in the waters of the rest of the world. This has been the history of China throughout a large part of Palæozoic time, and therefore its Palæozoic faunas offer to the student a wealth of new and distinctive forms, not a few of which became progenitors of the dominant elements in the cosmopolitan faunas of subsequent epochs. To the Palæozoic inhabitants of China, we may aptly apply the words :

“Es bilded ein Talent sich in der Stille, doch ein Character in dem Strom der Zeit”. The Upper Devonian faunas of China like the Middle, developing their talents or distinctive characteristics within the quite and seclusion of the Chinese waters, then sent forth their migrants with character-