

NEW *CERATODUS* FROM SHENMU, N. SHENSI

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Some fossil fishes were discovered recently by a field party of petroleum geologists of Ordos, Inner Mongolia, and sent in November, 1959, to the Institute for determination. Among the specimens, two teeth of *Ceratodus* are well preserved, and the others are too fragmentary for making a generic determination.

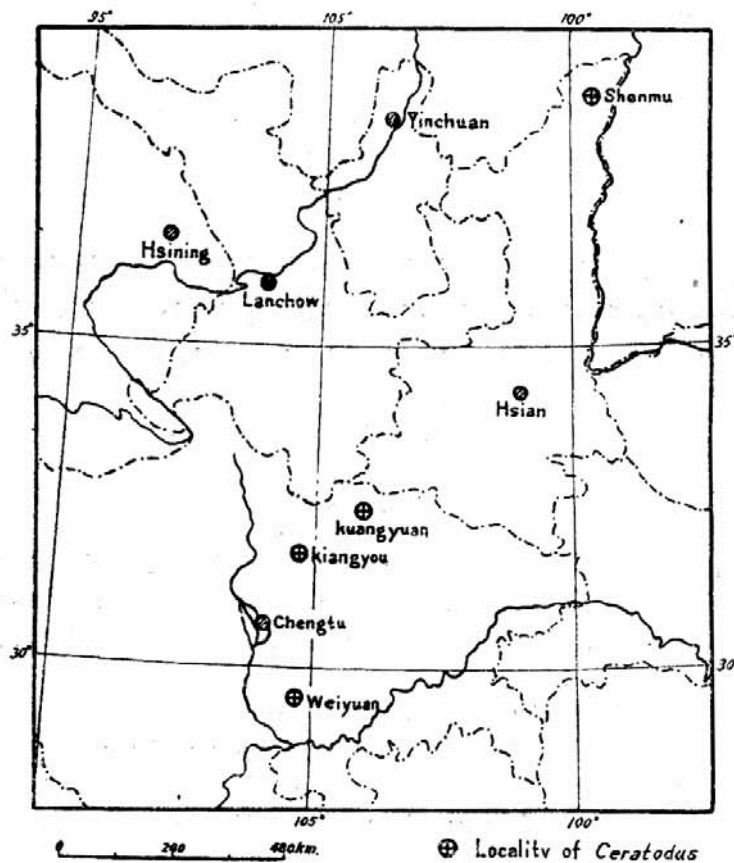


Fig. 1 Distribution of Localities of *Ceratodus* in China.

Three species of *Ceratodus* were described in China in years gone by, but all of them had been found in Szechuan province. Although some Mesozoic coprolites of lungfish were collected from Shensi in 1951, no bodily remains of this group were discovered before in this province. The present report represents the first record of *Ceratodus* in China besides Szechuan. Therefore it is of great interest either in the distribution of this genus in China or in paleogeography and paleoclimatology in this region.

According to the geological section kindly submitted to us by the field party mentioned above, the two teeth were collected in the same horizon in the uppermost part of "Wayapo coal series" from Ma-chia-ch'a, Shenmu, N. Shensi. The two palatine dental plates are both of the right side, and belong to different species.

One (Cat. No. V.2345) is irregularly triangular in outline, with five ridges separating by valleys which decrease in breadth posteriorly. The last valley is the most short and shallow one, the inner part of the fourth and fifth ridge is therefore fused together. All ridges are rather compressed and ornamented with fine serrations 3—5 in number and in an exceedingly worn state. The inner angle forms a right angle, but there is no conspicuous tip of angle in our specimen (Plate I, fig. 2). The maximum length of the dental plate is 20 mm and the maximum breadth is 11 mm.

As all the characters of the dental plate just described resemble closely those of *Ceratodus szechuanensis* Young from Kuangyuan, Szechuan, this new specimen is regarded as belonging to this species.

The other dental plate (Cat. No. V.2436) is comparatively straight in outline. It bears five ridges and four valleys too, but the valley between the last two ridges is so short and shallow that the inner most part of the fourth and fifth ridges is closely fused. The shape of the ridges is not so compressed as what is seen in *Ceratodus szechuanensis*, especially the first and the fused part of the last two which seem to be somewhat swelling.

The tip of the fifth ridge was slightly damaged. All the others are ornamented with three or four sharp serrations with their tips pointing inside and in a less worn state when compared with the tooth just mentioned. The inner angle of the plate is obtuse. The anterior short arm and the posterior long arm form a slightly curved arch through the inner angle, the tip of which is therefore not sharp. All of the inner ends of the 2nd, 3rd, and 4th ridges are in contact with the posterior long arm separately (without tendency of converging toward inner angle). Thus, the outline of the dental plate is rather comb-like (Plate I, fig. 1).

Measurements of specimen (V. 2436): in millimetre

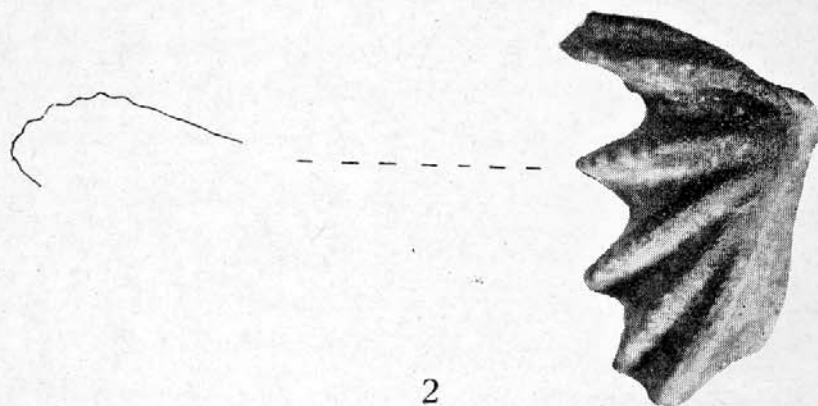
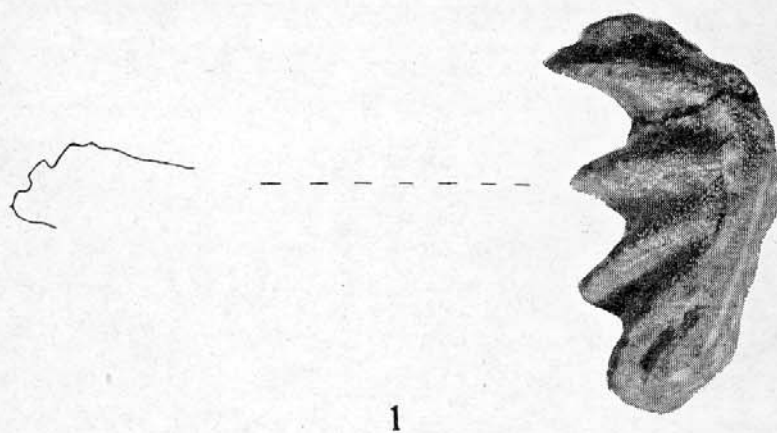
Maximum length	17.5
Maximum breadth	11
Length of first ridge	11
Length of second ridge	9
Length of third ridge	10
Length of fourth ridge	10.5
Length of fifth ridge (with its outside tip damaged)	15
Maximum breadth of first valley	6
Maximum breadth of second valley	5
Maximum breadth of third valley	4.5
Maximum breadth of fourth valley	2

By the description of the present specimen given above one can see that the most remarkable character of our dental plate is the more or less straight shape of outline with an obtuse inner angle, a shape which is quite different from that of *Ceratodus szechuanensis* Young with its right inner angle. Though it is somewhat like *Ceratodus minor* Liu et Yeh from Kiangyou, Szechuan, the latter one is too small (only 10 mm in length) to compare with our specimen. Generally, the Triassic species of *Ceratodus* are always of considerable size and with acute inner angle, the Jurassic species are usually of comparative small size and with right or obtuse inner angle. Our specimen resembles closely to the Jurassic species *Ceratodus philippsii* Agassiz in most of the characters but differs from the latter which has five distinct ridges and has its posterior long arm of inner angle extended straightly. It seems to us that the present specimen represents a new species for which we propose the name *Ceratodus shenmuensis* (sp. nov.) indicating where the specimen was found.

The geological age of the fish-horizon is very interesting. According to the opinion of the field worker who discovered these specimens, the fossiliferous stratum may be correlated with Wayaopo coal series which was considered by palaeobotanists as Upper Rhaetic. However, in view of the characters of *Ceratodus*, such as the size of the dental plate and inner angle etc., the present authors regard the fossil-bearing stratum as Lower Lais rather than Upper Rhaetic. The correlation of the fish-bearing horizon with the Wayaopo coal series and its geological age remain to be a problem which needs further elucidation.

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1. *Ceratodus shenmuensis*, sp. nov., an upper right dental plate in ventral view. $\times 2$. Cat. No. V. 2346.
2. *Ceratodus szechuanensis*, an upper right dental plate in ventral view. $\times 2$. Cat. No. V. 2345.