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Psygmophyllum Purkyněi Šusta and Psygmophyllum Delvali Cambier et Renier.

In the journal: „Sborník Přírodovědecké společnosti v Mor. Ostravě“, Vol. III. 1924/25 appeared a very interesting article about some new species in our czechoslovakian carboniferous entitled: „Phytopalaeontological news from the carboniferous beds of Karvinná“. Among those plants is also described and figured a quite new species of the genus *Psygmophyllum* under the name of *Ps. Purkyněi* ŠUSTA n. sp. One specimen of this last species was kindly sent by the discoverer to Dr. C. PURKYNĚ, director of our geological survey in Prague, who passed this very interesting fossil to the great palaeobotanical collections of our National Museum Prague. And in this way I had the opportunity to compare this new *Psygmophyllum* with other species described until now. After examining some greater informatif text-books as especially for instance the great work by Mr. SEWARD „Fossil plants“ I convinced myself that this new species, which were found by Dr. Ing. V. ŠUSTA in the series of Karvinná in the coal basin of czechoslovakian Silesia (loc.: the pit Hlubina and Františka, hanging-wall of the coal-seam 16. [„Jan“] and 19.), is comparable only with the so called *Ps. Delvali* CAMB. REN. from the westphalian series (beds „Duchesse“) in the coal-basin of Charleroi. And in the same time I thought this species to be very near allied with the named franco-belge type if not at all quite identical with it.

In order to evaluate both species, it is necessary to take in mind the most characteristic features of them.

The leaves of the franco-belge type *Ps. Delvali* (see: CAMBIER-RENIER „*Psygmophyllum Delvali*“ n. sp. du terrain houiller de Charleroi Ann. de la Soc. géologique de Belgique t. II. Mém. in 4°, Liège 1910. and A. RENIER „Documents pour l'étude de la palaeontologie du terrain houiller“) are of a very long but rather narrow wedge shape. They are archlike cut at their top. The specimen figured in CAMBIER-RENIER (l. c.) in nat. size measures about 35 cm in length and about 14 cm in breadth in its broadest place i. e. near to its top. The specimen figured in the atlas by A. RENIER (l. c.) measures in length only 24 cm, in breadth 9 cm. The nerves radiate from the base in a fan-like manner. Dividing themselves dichotomously from the base to the top of the leaf-lamina they form a very dense system of nerves, in which about 30 nerves are fit into the space of 1 cm (measured across the leaf in its upper part). At the base they are rather thick and the distance between each of them is about less than one mm. In the direction to the top they become by and by finer and the distance between them smaller. On well preserved specimens we may observe, that both sides of the leaves are of different structural features. On one of them there are between the nerves some very fine veinlets, on the other side, we may

observe between the nerves fine crosse-wrinkels; both features, which are to be observed on different types of Cordait-leaves. The leaf-lamina is generally torn at the top according to the nerves, as we may see it in some palm-leaves.

The features of the so called *Ps. Purkyněi* are as follows: The leaves are long and rather narrow, wedge-shaped. Their tops are also archlike cut. The length is according to ŠUSTA'S discoveries from 20 to 42 *cm*, their breadth from 8 to 18 *cm*. The nervation is described by ŠUSTA in the following way: „The nerves are straight, radiate from the base being dichotomously divided. Near to the base of the leaves they are rather thick, being about 1 *mm* removed each from the other; in the direction to the other end of the leaf they become by and by finer and in the same time denser, they become less distinct so that at the top they are very fine and dense. I observed also on some places always 2 till 5 finer veinlets and one thicker nerve, by which feature such place agrees to Cordaites principalis. This feature of the nerves is in our *Psymmophyllum* very inconstant and I did not see any leaf, to the whole surface of which could be used that rule.“ But Mr. ŠUSTA does not inform us, as to the density of nerves as well as to the finer structures of the leaf-lamina, as we are able to observe those features using a microscope. And as to those last characters we easily may convince ourselves that they are quite similar to those of *Ps. Delvali*. Using a microscope we are able to see the finer veinlets between the nerves as well as the cross-wrinkles. The density of the nerves is also about the same as stated by CAMBIER and RENIER in the *Ps. Delvali*. The only difference is that the lamina is so much pressed, that on the impressions both these structures are sometimes combined. In such way in some places predominates the first in other ones the second of both above named structures. But in fact, the leaf lamina is provided with both finer structures, as we have seen them in *Psymmophyllum Delvali* and many Cordaites.

If we compare both those diagnosis we see that:

1°. The dimensions of the leaves of *Ps. Delvali* CAMB. REN. may easily be included into the serie of dimension-variations of the leaves of the ŠUSTA'S type *Ps. Purkyněi*.

2°. The shape as well as the incisions of both leaf-types are perfectly the same.

3°. The character of the nervation as well as the finer structures of the lamina between the nerves are also perfectly identical.

The only what we did not know are the anatomical details, which are not to be discovered, because the substance of the lamina is so much fossilised that it is impossible to use SCHULZES maceration method. But nevertheless the morphological features as well as the finer structures are in such a high degree identical, that I have no doubt that both named species are only one and the same leaf-type and that the name *Ps. Purkyněi* ŠUSTA must be considered as only a synonym for the very fine CAMBIER-RENIER'S type from 1910, the so called *Ps. Delvali* CAMB. REN.

With such identification agrees also the stratigraphical and geographical position of both named discoveries. Both are from the westphalian series — the franco-belge specimens from the westphalian beds „Duchesse“, the silesian ones from the Karvinná-beds, which in the whole are synchronic to the westphalian in the coal-basins of western Europe. From the phyto-geographical point of view both are belonging to the great european band of paralic coal-basins, which is beginning in the South-England and going across North-France, Belgium,

Western Germany, German, Czechoslovak and Polish Silesia till to Russia (where they acquire a slight different character).

The discovery of *Psymm. Delvali* CAMB. REN. by Mr. ŠUSTA is for the palaeobotany also of another interest. In the Silesian coal-basins there has been made some discoveries of some cuneiform leaves; one stated by Potonié (see POTONIÉ: Lehrbuch der Pflanzenpalaeontologie 1897. T. II., f. 2.) at Czervionka, the other by Goepfert (see GOEPPERT: Gattungen der fossilen Pflanzen. T. XII., Fig. 2., 5. und 6. Lieferung) at Charlottenbrunn, determined as *Cordaites* (the first one) or *Noeggerathia Beinertiana* (the second one). CAMBIER and RENIER in their mentioned article are of the opinion that both those Silesian cuneiform leaves may be perhaps the same species as their *Ps. Delvali*. And this opinion is very well attested by the newest interesting discoveries of Mr. ŠUSTA. These new discoveries attest also what a large areal of geobotanical distribution had some Carboniferous types throughout the European paralic coalbasins, even if they are very rarely found.

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