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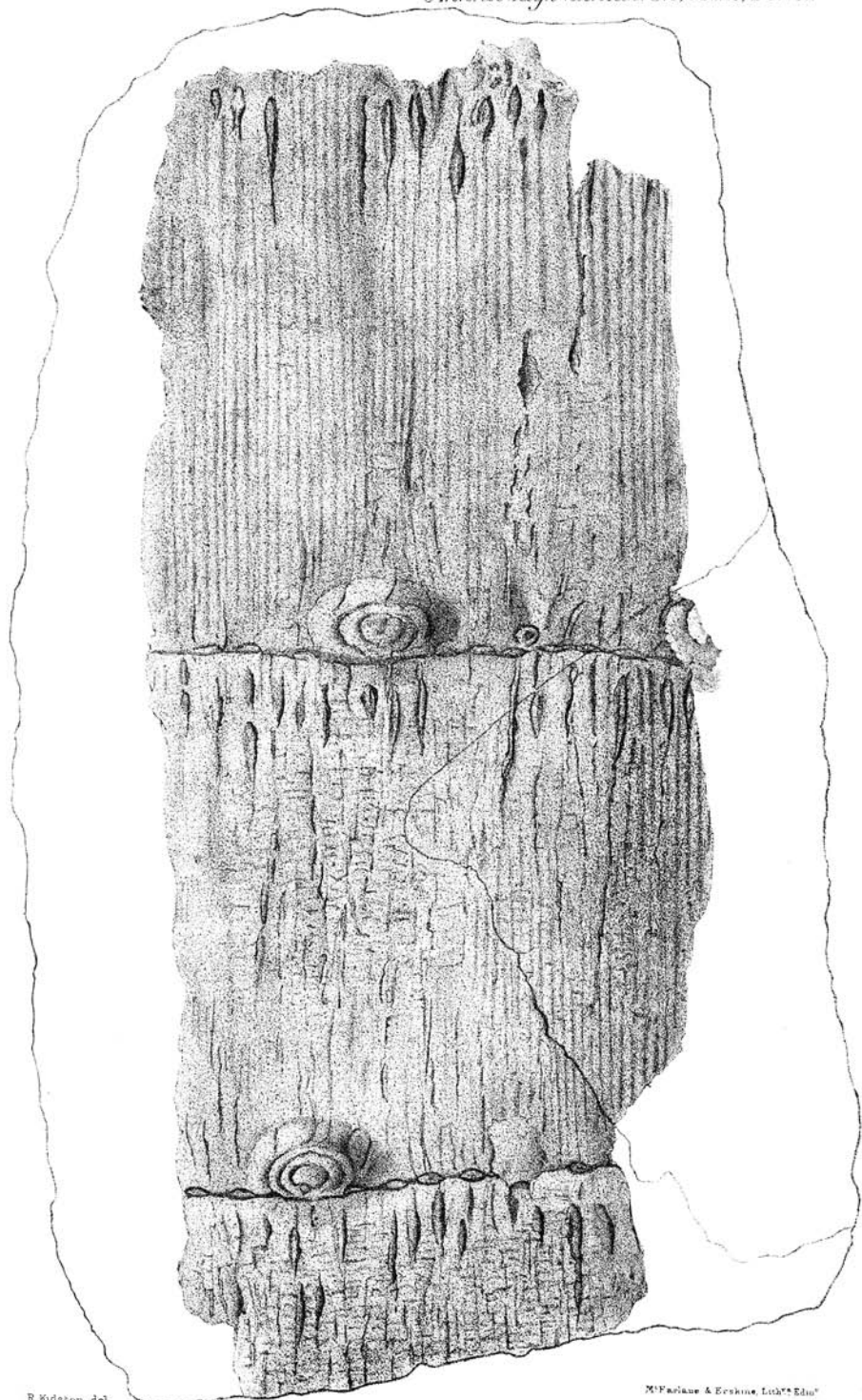
XIII.—*On a new Species of Calamite from the Middle Coal-measures* (Eucalamites (Calamites) britannicus, Weiss, MS.).
By R. KIDSTON, F.R.S.E., F.G.S.

[Plate VII.]

THE fossil which forms the subject of this communication was previously in the collection of Mr. C. Beale, Rowley Regis, near Dudley, by whom it was collected. Before describing the specimen it may be well to give a brief review of the groups into which Dr. Weiss, of Berlin, has subdivided the genus *Calamites*. It must be borne in mind, however, that these groups are not to be regarded as genera, but as convenient divisions—probably of a provisional nature—in which those forms having certain characters in common are brought together.

Nothing but their fructification can afford a satisfactory basis of classification; but as stems of *Calamites* have so rarely been found with cones attached to them, it is impossible at present to classify them from characters derived from the structure of the fruit. In the absence, then, of a sufficiently complete knowledge of the fructification of *Calamites*, we must avail ourselves of such characters as those which enable us

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CALAMITES (EUCALAMITES) BRITANNICUS, Weiss.

to prepare a scheme in which can be brought together those species that have certain points in common.

Although the groups proposed by Weiss may be more or less artificial, the necessities of the case demand some such scheme in which can be arranged the data for a more perfect classification.

CALAMARIÆ.

CALAMITES, Suckow.

Division A.—Ribs on stems alternating at the nodes or joints.

Group I. CALAMITINA (emend.), Weiss.

Calamitina (emend.), Weiss, Steinkohlen-Calamarien, part ii. p. 59 (1884)*.

Branch-scars occurring periodically, the nodes bearing scars being separated from each other by a certain number of joints which do not bear branches. In most cases there is a regular increase or decrease in the length of the joints which connect the branch-bearing nodes.

Example :—*Calamites varians*, Sternberg.

Group II. EUCALAMITES, Weiss.

Eucalamites, Weiss, *ibid.* part ii. p. 96 (1884).

Branch-scars occurring on every joint. The joints are of the same length or of irregularly different lengths.

Example :—*Calamites ramosus*, Artis.

Group III. STYLOCALAMITES, Weiss.

Stylocalamites, Weiss, *ibid.* part ii. p. 119 (1884).

Branch-scars occurring without definite order, of subordinate importance; often long stretches of the stem occur on which the branch-scars are entirely absent. The joints are of equal length or of irregularly different lengths.

Example :—*Calamites Suckowii*, Brongn.

* Part i. in 'Abhandl. z. geol. Specialkarte v. Preussen u. d. Thüringischen Staaten, Band ii. Heft i. (1876); part ii. *ibid.* Band v. Heft ii. (1884).

Division B.—Ribs on the stem not alternating at the joints or nodes.

Group IV. ASTEROCALAMITES, Schimper.

Asterocalamites, Schimper, Terrain de Transition des Vosges, p. 321 (1862).

Archæocalamites, Stur, Culm Flora, p. 2 (1875); Weiss, *l. c.* part ii. p. 141 (1884).

Branch-scars irregularly distributed. Joints unequal in length.

Example :—*Calamites scrobiculatus*, Schlotheim, sp.

Eucalamites (*Calamites*) *britannicus*, Weiss, MS. (Pl. VII.)

Description.—*Stem* : joints as long as broad, outer surface only faintly ribbed, with here and there transverse wrinkles. *Nodal lines* sharp and distinct, bearing a row of chain-like or in part separated, transversely-oval leaf-scars with a central cicatrice. *Branch-scars* large, immediately above the nodal line, transversely elliptical, with concentric zones, distant from each other, only a few in a whorl on each joint (on the surface of the specimen figured two branch-scars are seen on one node and one on the other), somewhat irregularly placed, not regularly alternating. On the upper nodal line between the two large scars occurs a small round scar.

Remarks.—This Calamite, from having branch-scars developed on each node, belongs to the group of *Eucalamites*, but shows also affinities with the *Calamitina* in the form and “chain-like” arrangement of the leaf-scars on the nodal line; the transversely elliptical leaf-scars are somewhat similar to those of *Calamitina Wedekindi*, Weiss*. It also exhibits in the oblique though not exactly alternating position of the branch-scars on the neighbouring nodal lines some similarity to *Eucalamites* (*Calamites*) *cruciatus*. The fossil, which is the impression of the outer surface, shows two joints and a portion of a third one, and exhibits here and there transverse wrinklings, somewhat like those on the surface of the specimen given in ‘Steinkohlen-Calamarien,’ part ii. pl. xvii. figs. 2 and 3, but not so strongly expressed. These probably indicate the drying and contraction of the outer surface of the stem before fossilization. The outer surface further shows peculiar elongated elliptical marks with a central depression, situated below the nodal lines and similar to those of pl. i.

* ‘Steinkohlen-Calamarien,’ ii. p. 88, pl. xvii. fig. 1.

fig. 2 ('Steinkohlen-Calamarien,' part ii.); but they are not so regular. They may have originated from fungi; similar formations occur on other plants.

The above description and remarks have been forwarded to me by Dr. Weiss, to whom I sent a sketch of the fossil for his examination and description, as his knowledge of this group of fossils is probably more intimate than that of any other palæobotanist, and especially when impressions of the plant have to be dealt with. The most interesting point in this fossil is the association of the character of *Eucalamites* and the chain-like leaf-scars of *Calamitina* on the same specimen.

I am much indebted to Dr. Weiss for his kind assistance in examining and describing this plant.

Horizon. Middle Coal-measures; in ironstone nodule in shale above "Thick Coal."

Locality. Shut End, between Himley and Kingswinford, South Staffordshire.

EXPLANATION OF PLATE VII.

Eucalamites britannicus, Weiss, n. sp. (natural size).

XIV.—*Notes on some Vertebrate Fossils from the Province of Bahia, Brazil, collected by Joseph Mawson, Esq., F.G.S.*
By A. SMITH WOODWARD, F.G.S., F.Z.S., of the British Museum (Natural History).

So long ago as the time of Spix and Martius's travels* the occurrence of vertebrate fossils in the rocks of Brazil had been observed; and during the preparation of his great work upon the "Poissons Fossiles" Agassiz met with numerous examples of fishes from the supposed Upper Cretaceous deposits of the province of Ceará, of which he published two brief notices†. Somewhat later‡ Mr. Allport made known

* J. B. von Spix and C. F. von Martius, 'Reise in Brasilien,' 1823–31, Atlas, pl. xxii, fig. 5.

† L. Agassiz, Appendix to G. Gardner's "Geological Notes made during a Journey from the Coast into the Interior of the Province of Ceará, in the North of Brazil," Edinb. New Phil. Journ. vol. xxx. (1841), p. 83. Also "Sur quelques Poissons fossiles du Brésil," Comptes Rendus, vol. xviii. (1844), pp. 1007–1015.

‡ S. Allport (with notes by Egerton, Morris, and Rupert Jones), "On the Discovery of some Fossil Remains near Bahia in South America," Quart. Journ. Geol. Soc. vol. xvi. (1860), pp. 263–268, pls. xiv.–xvii.