NOTES ON FRESH—WATER SPONGES FROM THE VOLGA—BASIN.

By

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Recently Dr. A. Behning, Direcktor of the Volga Biological Station at Saratow sent to the Natural History Museum, London. nine specimens of fresh—water Sponges collected in the Jeruslan and Samara rivers, tributaries of the Volga, seven examples from the former: Soljana Kuba (9.IX.13 and 10.IX.13), Jeruslan at the Bjelaja Kuba (12.IX.13), Jeruslan at Michailofka (12.IX.13), Bjelaja Kuba (12.IX.13), and a „Liman" at Michailofka (10.IX.13), and two from the latter: Samara at Totzkoje (27.VI and 12.VII.13).

The specimens, which apparently all come within the limits of Ephydatia mülleri Lieberkühn may be arranged in two groups. One, from Jeruslan at Bjelaja Kuba, Jeruslan at Michailofka and Bjelaja Kuba, is identical with E. mülleri Form A. Dybowski, all the others belonging to a new variety which I. propose to call Ephydatia mülleri var. behningi nov.

EPHYDATIA MÜLLERI (LIEBERKÜHN).

1856. Spongilla mülleri Lieberkühn. Arch. Anat. u. Phys. 1856 p. 510. Pl. XV fig. 30.

1882. Meyenia № 2 and Meyenia № 3 vars. α. β, Dybowski. Mem. Acad. Imp. Sci. St.-Petersbourg (Ser VII) Tom 30 №16 pp. 15—20 Pls. I—III Figs 1, 2, 5, 8, 11.

1883 (1). Ephydatia mülleri Forma A, Forma B' & var astrodiscus Vejdovsky. Abhand. K. Böhmisch Ges. Wiss. Prag. Folge VI. Bd. XI[1] № 5. pp. 26—31.

1883 (2) Ephydatia amphizona Vejdovsky. Sitzungsb. K. Böhmisch Ges. Wiss. Prag. 1883 p. 331. Pl. Fig. 1, 2.

1887 Ephydatia mülleri Vejdovsky in Potts Monograph Freshwater Sponges. Proc Acad. Nat Sci Philadelphia p 177.

1887. Ephydatia mülleri Wierzejski. Zool. Anz. Jahrg. 10 pp. 122—126.

1895 Ephydatia mülleri Weltner. Archiv f, Naturg. 1895, Bd. I. p 125.

1903. Ephydatia mülleri Zykoff. Bull. Soc. Nat. Moscou 1903 p. 42.

1903. Ephydatia mülleri Skorikow. Jahrb. Biol. Wolga-Station Hft. 1. p. 33.

Lieberkühn's original description of the species was based on specimens found in the Spree at Berlin. He states that the surface of the skeleton spicules was finely spined (höckerig) and that the margins of the disks of the amphidisks were jagged.

The next important reference was that of Dybowski who, in 1882, described various Russian forms of this species under the designations Meyenia № 2 and Meyenia № 3 vars α and β, the forms and varieties being chiefly distinguished by differences in the size of the amphidisks, in the degree and kind of incision in the disks of these spicules, and in the size and surface-characters of the skeleton spicules.

In 1883 (1) Vejdovsky gave a detailed account of these varieties which he names Forma A, Forma B and var. astrodiscus. He regarded Form A as identical with Meyenia № 2, Form B as similar to Meyenía № 3 var α (from Niankow), and var astrodiscus as being the same as Meyenia № 3 var β (from Chalaktir See)

In 1883 (2) he described a new species E. amphizona with a double layer of amphidisks round the gemmules, and rekorded E. mülleri var. astrodiscus as a synonym of E. mülleri (typica).

In Pott's Monograph (1887) he included all the above forms and varieties, and also the species E amphizona under E. mülleri.

In 1887 Wierzejski described the blasenzellen present in E. mülleri.

Weltner (Naturw. Wochenschrift 1892 p. 446) writes „ImWeichkörper, besonders in der äusseren Haut finden sich sehr grosse blasenförmige Zellen, bestehend aus einem dün-

nen, körnigen Protoplasma-mantel und einer grossen Flussigkeits-alveole“.

In Archiv f. Naturg. Bd. I. 1893 Pl. VIII fig 14 he gives a figure of a „Blasenzelle“.

The Sponges from the Volga, which are all preserved in formalin, are in the form of small white crusts and patches on stems of water-plants. Gemmules are present five examples, and a very careful search reveal the existence of amphidisks in all.

A few small inconspicuous os-cules are visible on some of the specimens.

The skeleton is formed of vertical main fibres several spicules thick and of more or less horizontal secondary fibres only one or two spicules thick. The main fibres form slightly spreading tufts at the surface of the sponge.

In all cases there are both finely spined and smooth spicules present, and also very slender young forms usually with a central swelling

In specimens E. 12, E. 16, and E. 20 belonging to Form A Vejdovsky the skeleton spicules are decidedly shorter and thicker than those of the new variety behningi, and the spines of the rough spicules of Form A, though sparse and small, are more evident than in the latter.

Indeed, in the new variety at first sight spicules all appear to be smooth, and spinous ones are only to be found with difficulty.

The amphidisks in Form A have thicker and shorter shafts than in var behningi. I found a few blasenzellen in the specimens placed in Form A, but did not see them in var. behningi. Probably they are present in considerable numbers, but formalin does not act well as a preservative of histological structure in sponges.

Prof. Weltner, very kindly sent me at my request, specimens of Ephydatia müller i including one from the Spree at Berlin—the locality whence Lieberkühn's original specimens came. Accordingly Jam able to give figures of the skeleton spicules and amphidisks of the Volga examples and of that from the Spree. The details of measurements are tabulated below:

	Skeleton spicules	Amphidisks.
1. E. mülleri from the Spree	206 × 19 μ spines well marked.	Length and breadth of shaft 22 × 8 μ diameter of disk 36 μ.
2. E. mülleri Forma A Volga.	209 × 18 μ spines easily seen, but less marked than in specimen from the Spree.	Length and breadth of shaft 40 × 8 μ diameter of disk 35 μ.
3. E. mülleri var. behningi nov. Volga.	303 × 13 μ spines very rare and small.	Length and breadth of shaft 47 × 5 μ diameter of disk 35 μ.

The new variety is characterised by relatively long and slender skeleton needles mostly smooth, and when spinous, with spines only very small and sparse. Further the amphidisks also have long slender shafts and disks not de ply incised. The figures of the bove three forms of E. m ü l l e r i show clearly the above mentioned different characters.

A figure is also given of M e y e n i a № 3 var α of Dybowski from Niankow a form which Vejdovsky regarded as identical with his F o r m a B. The short thick amphidisks and conspicuously spined skeleton spicules differ markedly from the same spicules in var. b e h n i n g i.

Some might regard var. b e h n i n g i as a new species, but is should de borne in mind that E. m ü l l e r i is very „formenreich“ (Vejdovsky) and Weltner point out that „Die Localv rietäten sind ungeheuer gross“.

EXPLANATION OF FIGURES.

Fig. 1. Ephydatia mülleri Liebk. from the Spree, Berlin. a, b, skeleton spicules or oxeas × 165 c—f amphidisks; × 370 (From specimen sent's Prof. W. Weltner)

Fig. 2. E. mülleri var. behningi nov. a, b, oxeas × 165 c. f, amphidisks × 370 (From Dr. Behning's specimen from Volga).

Fig. 3 E. mülleri. Form A. Vejdovsky, a, b, oxeas × 165 c–f amphidisks × 370. (From Dr Behning's specimen from Volga).

Fig. 4. E. mülleri from Niankow (var. α aus Niankau) a, b, oxeas × 165. c—d amphidisks × 370 (From specimen in „Carter Coll" Brit. Mus.).

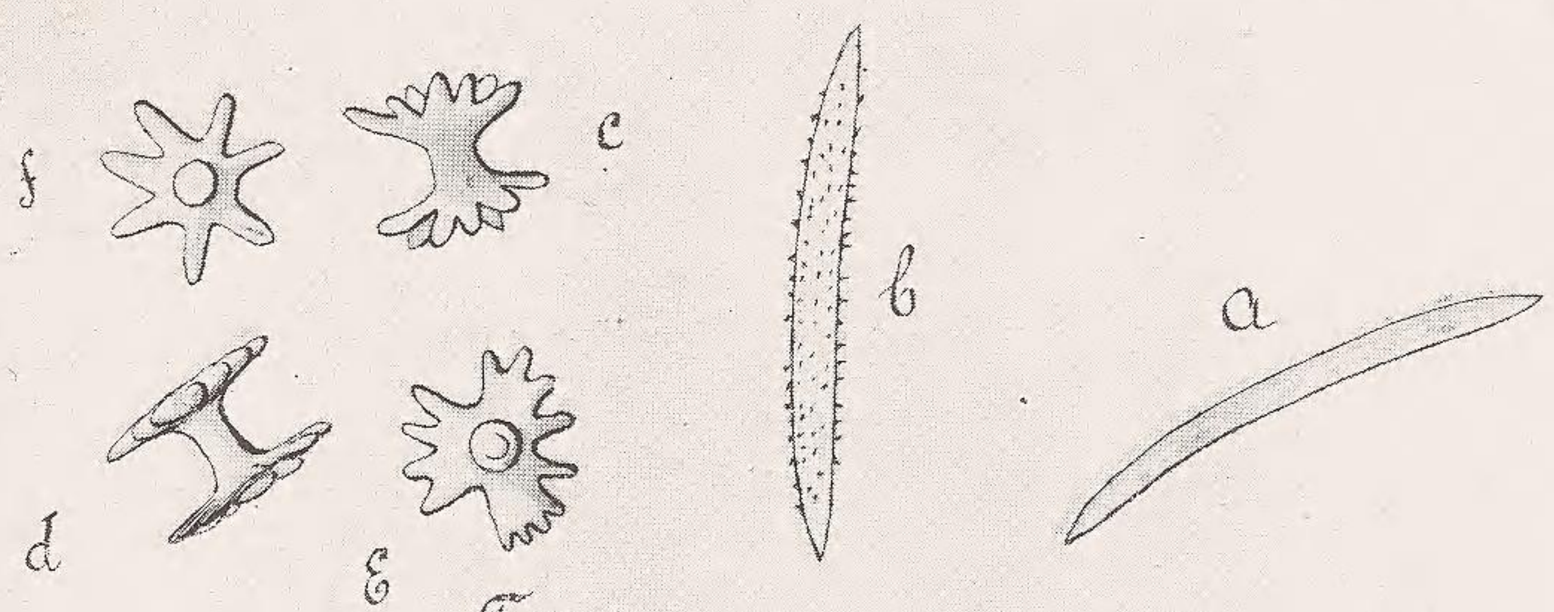

Fig. 1.

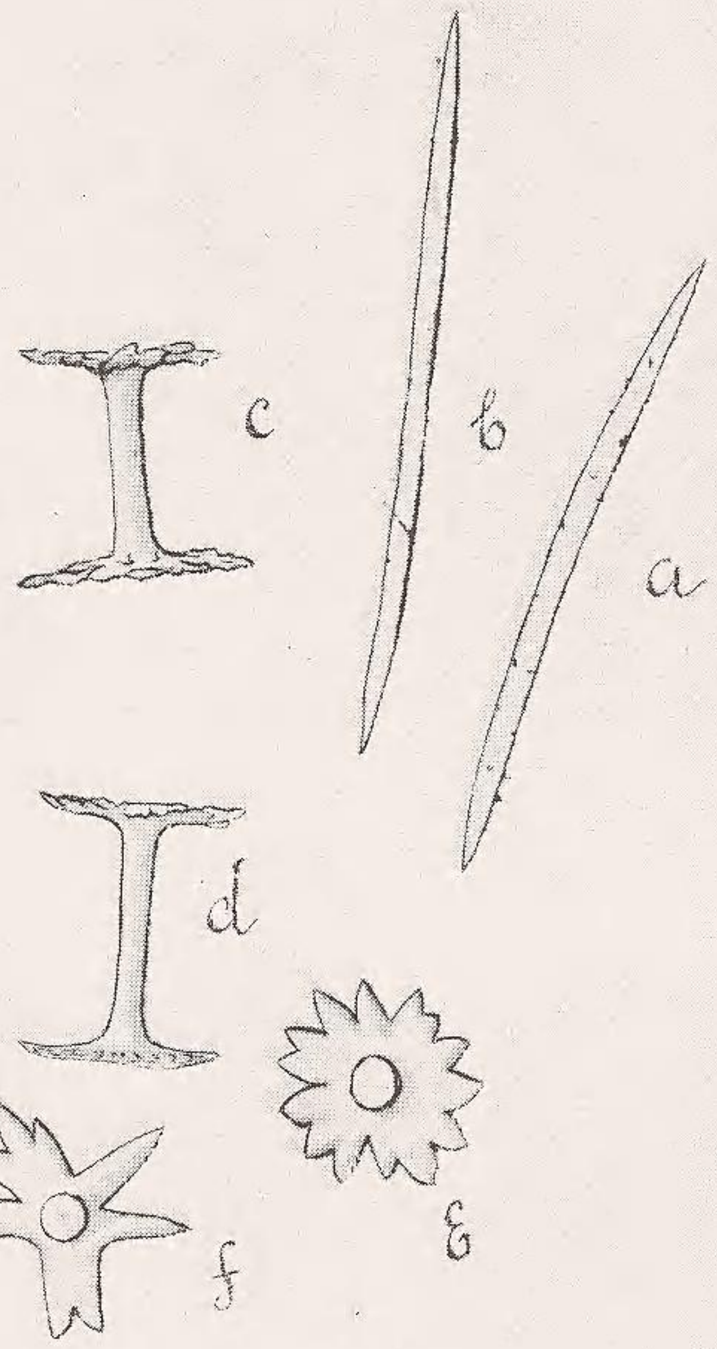

Fig. 2.

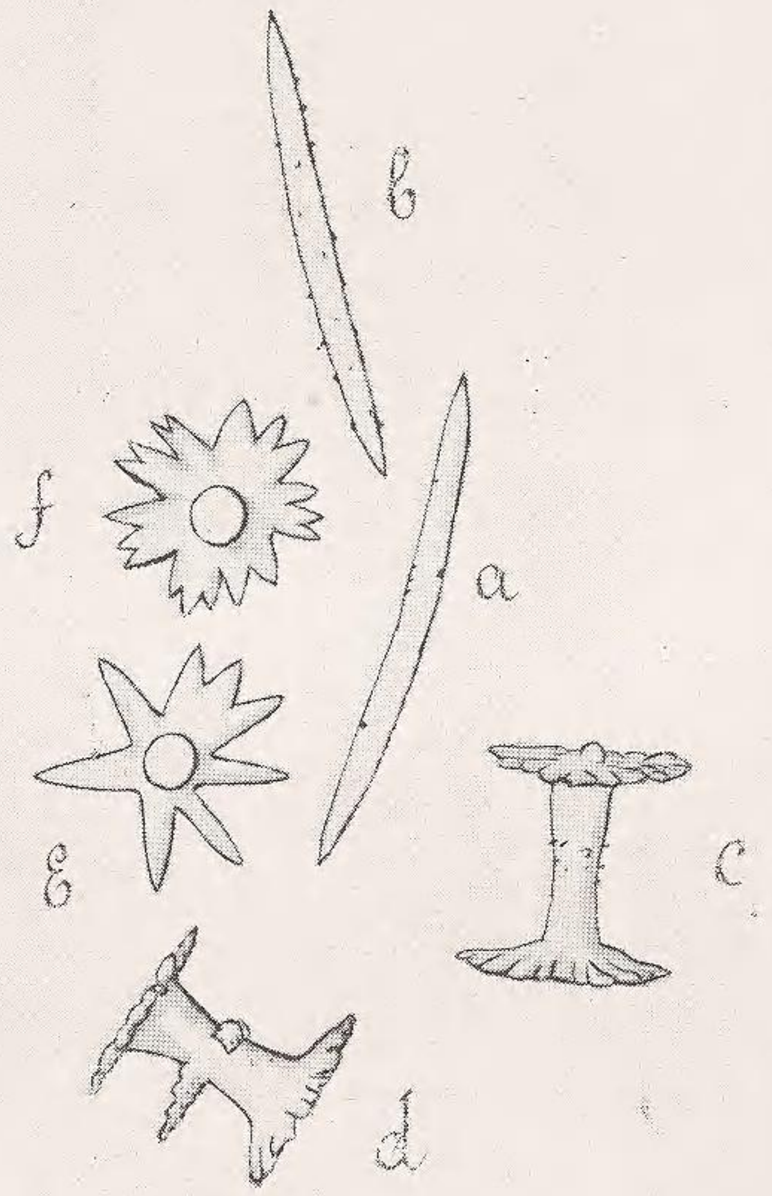

Fig. 3.

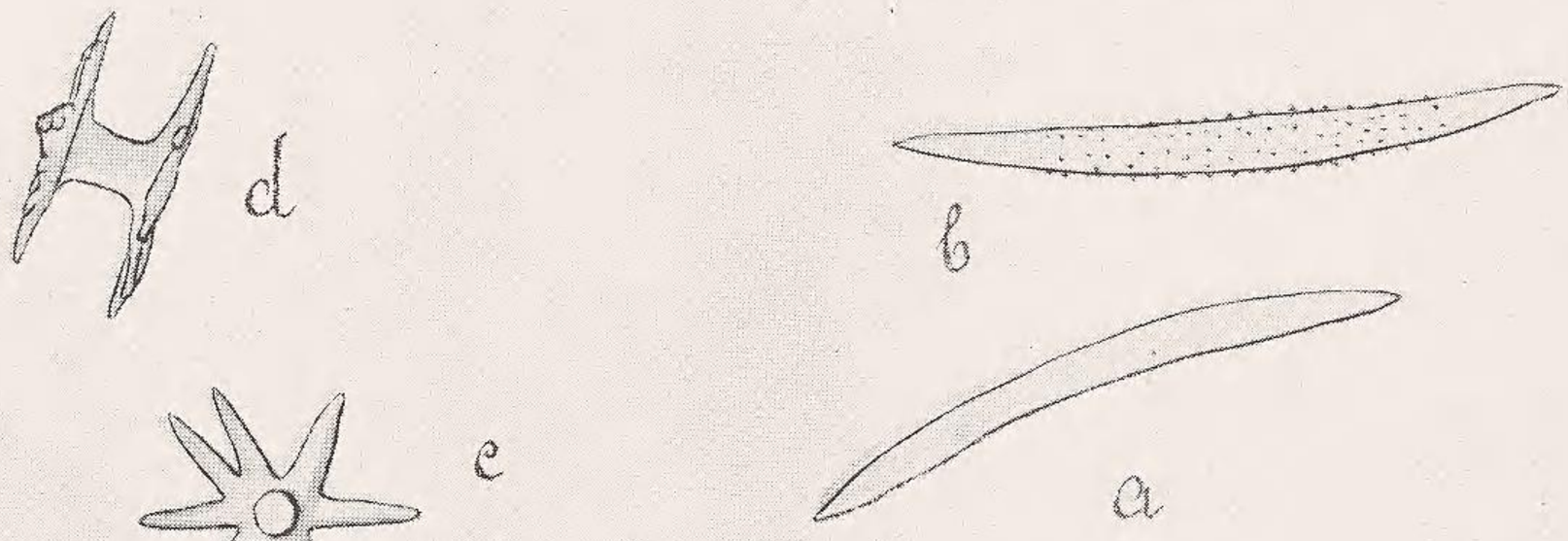

Fig. 4.