

NOTES ON THE FRESH-WATER SPONGES OF THE DUTCH EAST INDIES.

I. Historical

N. GIST GEE

The Rockefeller Foundation
Peking, China.

It seems rather strange that both CARTER, writing on the known fresh-water sponges up to 1881, and POTTS, in his monograph written in 1887, should have overlooked the record of E. VON MARTENS' (1) *Spongilla vesparium* which was described and illustrated in his „Ein Süßwasserschwamm aus Borneo" in Archiv. fur Naturg. 34, 1868. This interesting form was found in the Kapuas River and also growing on the branches of a tree, in Lake Danau Sriang, which had been under water but were then, on account of the drought, several feet above the water level. At first observation these masses were thought to be wasps' nests, but a closer examination revealed the fact that they were fresh-water sponges. This sponge now becomes *Tubella vesparium* (VON MARTENS).

The next student of the fresh-water sponges of this region was MAX WEBER, and he published the result of his investigations in 1890 in a paper entitled "Spongillidae des Indischen Archipels", in Zool. Ergebn. Reise Niederl. Ost-Indien, p. 30-47, Pl. IV. In this most interesting contribution he adds the following records to the occurrence of species in these regions:

- (2) *Spongilla cinerea*, CARTER, Batjo Keke Creek near Pare-Pare, West Coast of South Celebes; small stream near Bari on the north coast of West Flores; a small Sawah pool in Makassar. ANNANDALE, in his Fauna of British India p. 74, states that he has examined WEBER's specimens of this species and has no doubt that they belong to *Spongilla proliferens* ANNANDALE.

Another sponge, concerning which WEBER expressed some doubt, was found in a small fresh-water lake near Garut in the Preanger Regenschappen, Java. He assigns this tentatively to *S. cinerea*. Another specimen, probably also belonging to this same species, was found in a pond near Tjipanas near Sindanglaja, West Java

- (3) *Spongilla decipiens*, WEBER, River Lapadi or Sare-minja near Pare-Pare, West Coast of South Celebes. ANNANDALE, Fauna of British India, p. 97, considers this a local race and prefers to call it a variety of

Spongilla fragilis. If this view is adopted it would then become *S. fragilis* var. *decipiens*, (WEBER).

(4) *Spongilla (Stratospongilla) sumatrana*, WEBER, Singkarak Lake, Sumatra.

(5) *Ephydatia fluviatilis*, auct., Manindjau Lake, Sumatra.

ANNANDALE in his "Fauna of British India", p. 110, 1909, writes "*Ephydatia meyeri* is closely related to the two commonest Holarctic species of the genus, *E. fluviatilis* and *E. mülleri*, which have been confused by several authors, including POTTS. From *E. fluviatilis* it is distinguished by the possession of bubble cells in the parenchyma, and from *E. mülleri* by its invariably smooth skeleton-spicules and relatively long shafts of its gemmule-spicules. The latter character is a marked feature of the specimens from the Malay Archipelago assigned by Professor MAX WEBER to *E. fluviatilis*". Through the kindness of Dr. W. ARNDT of Berlin, I have the following remark concerning this form from WELTNER's manuscripts: "I think that sponge mentioned by WEBER is near *Ephydatia ramsayi* (HESWELL)".

(6) *Ephydatia bogorensis*, WEBER, in a pond near Buitenzorg, Java; in a Sawah pool in Makassar. Another *Ephydatia* was found in a pond near Buitenzorg this probably belongs to the species *E. bogorensis*, but as there were certain differences between this and the typical form, WEBER raises a question as to its proper identification.

(7) *Spongilla*, sp., in a fresh-water lake in Singkarak, near Panjingsahan, Sumatra. WEBER considered this quite different from *S. sumatrana* which was found in another place in the same lake.

(8) *Spongillide* ? in small streams in Luwu in Central Celebes.

WELTNER published in 1901 „Spongillidenstudien IV, Süßwasserspongien von Celebes" in Arch. Naturgesch. LXVII, Beiheft, p. 187-204, Pl. VI-VII, a record of three new forms all of which were collected by SARASIN from the Celebes. These are as follows:

(9) *Pachydictyum globosum*, WELTNER, Lake Posso, Celebes.

ANNANDALE questions the validity of this genus, *Pachydictyum*, and remarks that probably it should become *Spongilla (Stratospongilla)*, Fauna of British India, p. 66, 1911, but later (1918) lists it under the original name in his „List of the Spongillidae of Asia", p. 210, Part IV, of his „Zoological Results of a Tour in the Far East". Mem. Asiatic Soc. of Bengal, Vol. VI. p. 183—216, 1918.

(10) *Spongilla (?) sarasinorum*, WELTNER, Lake Towuti, Celebes.

This form now, according to ANNANDALE, becomes *Nudospongilla sarasinorum* (WELTNER).

(11) *Spongilla (?) vasta*, WELTNER, Lake Towuti, Celebes, which according to more recent terminology now becomes *Nudospongilla vasta*, (WELTNER).

ANNANDALE, in his discussion of fresh-water sponges in his volume on „Fresh-water Sponges, Hydroids and Polyzoa" in the Fauna of British India, 1911, on p. 74 records:

- (12) *Spongilla proliferens* ANNANDALE, as occurring in Java, Flores and Celebes.

ANNANDALE in his Zoological Results of a Tour in the Far East, Mem. Asiat. Soc. Bengal, Vol. VI, p. 210, 1918, makes this sponge a variety of *S. lacustris*. If this view is accepted this then becomes *S. lacustris* var. *proliferens*.

KONINGSBERGER in 1914, Java Zool. en Biol. Afl., 10, p. 441, also records this species as occurring in Java. On p. 110 of the volume mentioned above, ANNANDALE also records the occurrence of:

- (13) *Ephydatia meyeri* (CARTER) in Sumatra, but gives no definite locality. KONINGSBERGER (1914) in the work referred to above adds:
 (14) ? *Spongilla alba*, CARTER, to the list of fresh-water sponges occurring in Java.

The writer had the good fortune to meet Dr. K. W. DAMMERMAN, Chief of the Zoological Museum at Buitenzorg, Java, during the Third Pan-Pacific Science Congress in Tokyo, Japan, toward the end of the year 1926, and urged him to keep in mind the fresh-water sponges when his collectors were visiting different parts of the islands of the Dutch East Indies. This, Dr. DAMMERMAN has done and as result quite representative collections of fresh-water sponges have been made in both East and West Java.

Dr. ADRIANA G. VORSTMAN has made and published preliminary studies of this material and now the writer has a representative lot from these collections and he is making a detailed study of it and hopes to have ready for publication some time during 1929 the results of this study. A great deal of time is required to secure the necessary literature and comparative materials from museums in the West and for this reason the work must proceed slowly. Dr. VORSTMAN published two papers in "De Tropische Natuur", the first, "Zoetwatersponsen van West Java" in No. 11, 1927 and the second, "Sponsen uit eenige plassen en meren in Oost Java" in No. 7, 1928.

In her first paper she adds three new records of occurrence in West Java of species already known to science. They are as follows:

- (15) *Spongilla crateriformis*, POTTS, in Botanical Garden; in a lake near the end of Tjitajam; in the lake of Tjigombong; in small lakes on the English Plain (Kamodjan); in lake of Pendjaloe. This form is often called *Ephydatia crateriformis*, but ANNANDALE placed it with the *Spongilla* forms.
 (16) *Spongilla carteri*, CARTER, in the Lake Lèlès, in fish ponds near Sadang and Wanaradja; in small lakes on English Plain (Kamodjan).
 (17) *Trochospongilla latouchiana*, ANNANDALE, in the Botanical Garden and in a lake near the end of the Tjitajam.

DR. VORSTMAN also gives definite localities in West Java in which two already recorded species have recently been found again: (12) *Spon-*

gilla proliferens, ANNANDALE, in ponds in the Botanical Garden; in a lake near the end of Tjitajam; in Siteo G. Poetri; in Siteo Barbakan; in Siteo Tjibinoeng; and (6) *E. bogorensis*, WEBER, which was also found in the ponds of the Botanical Garden.

In her second paper, DR. VORSTMAN gives five new localities in East Java for (16) *Spongilla carteri* as follows: Rawah Galapan and Rawah Bening (South Kediri); Lake Gratie; Ranoe Klakah and Ranoe Pasir (Base of the Lamongan). Two new localities for (12) *S. proliferens* are given; Rawah Bening (South Kediri) and lake of Ngebel (Madioen). In a list sent me from Buitenzorg on November 8, 1927, it is stated that this species has also been found on the Isle of Lombok (Narmada). (17) *Trochospongilla latouchiana* is reported from a single locality in East Java, Rawah Galapan (South Kediri)

Two additional new records are made for Java:

- 18) *Trochospongilla phillottiana*, ANNANDALE, was found in Rawah Bening (South Kediri). After a hurried preliminary study of this form the writer is inclined to call this very interesting form *T. tunghuensis*, GEE, or possibly a variety of that, rather than *T. phillottiana*.
- (19) *Ephydatia fluviatilis* var. *ramsayi* (HASWELL), was found in Ranoe Klakah (Pasuruan). This form is now usually accepted as a distinct species, *E. ramsayi*.