

C. SPENCE BATE, F. L. S., Corresponding Member, Dublin University Zoological and Botanical Association, sent the following paper—

ON THE GENUS NIPHARGUS (SCHIÖDTE).

WHEN the study of Carcinology was yet in its youth, Leach found, in a well attached to St. Bartholomew's Hospital, a small shrimp-like crustacean. This he took to be of the genus *Gammarus*, and called it *subterraneus*. The specimen has, I believe, not been preserved, and we know no more about it than what he tells us in the "Edinburgh Cyclopædia." The name has been perpetuated in catalogues. But that a crustacean of so high a form should be found in a dark well in the centre of London, has been considered more in the light of a stray and accidental occurrence than that such should be the normal abode of a race of beings so high. Little attention had the subject attracted in England until Mr. Westwood's very capital discovery, in 1853, of considerable numbers of a similar animal, which he procured by pumping from a deep well near Maidenhead, from which time until the discoveries of young Mr. Mullins, at Corsham, Wiltshire, and those of the Rev. A. R. Hogan, at Ringwood, Hampshire, I am not aware that any has been made in England.

Between the years 1835 and 1842, Koch published a series of papers, in which appeared some figures of Amphipoda, which he procured from the draw-wells about Reigensburg and Zweibürücken; these he considered to be one species, and named them *Gammarus Puteanus*.

About 1851 Schiödte found in the grottoes in Carniola a similar crustacean, which he described and figured in the "Danish Royal Society's Transactions." He appears to have been the first that recognised the true character of these subterranean Amphipoda.

Schiödte very properly placed them in a genus by themselves; but I question whether he is quite as correct in separating the Maidenhead species from his own, to which position Mr. Westwood had assigned it in the "Proceedings of the Linnæan Society for 1853."

In his description of Westwood's species, Schiödte says that it is dorsally carinated, but that *N. stygius* is not so. Examinations of the specimens deposited in the British Museum show this to be an erroneous impression, and Mr. Adam White, in his valuable "Manual of the British Crustacea," while accepting Schiödte's description of the species, omits to notice so striking and important a peculiarity, which he pro-

bably would not have done if the specimens had been within his reach for examination.

Under the name of *Gammarus Puteanus*, Koch has described and figured two species. With the second of these, Mr. Westwood's species agrees so nearly, that I believe it to be the same, and if, as I imagine, the species be identical, then Schiödte's specific name of *Stygius* will stand for all three, since undoubtedly both species of *G. Puteanus* belong to the genus of *Niphargus*. The specific name of *Puteanus* will, therefore, continue to be associated with the first described and most typical species of Koch.

M. Guerin-Meneville, of whose courtesy and kindness I cannot speak too highly, allowed me, when in Paris last autumn, to examine and take notes from his unpublished drawings and memoranda. Among these I found the figure of a *Niphargus*, that appears to be identical with *N. Puteanus*, that had been sent to him from the environs of St. Leger, Poitiers.

Judging from drawings and descriptions of the foreign, and examination of the only recorded British species, the specimens found in Hampshire and Wiltshire are distinct from any hitherto known. They include two new species and a new genus, of which the following are short descriptions:—

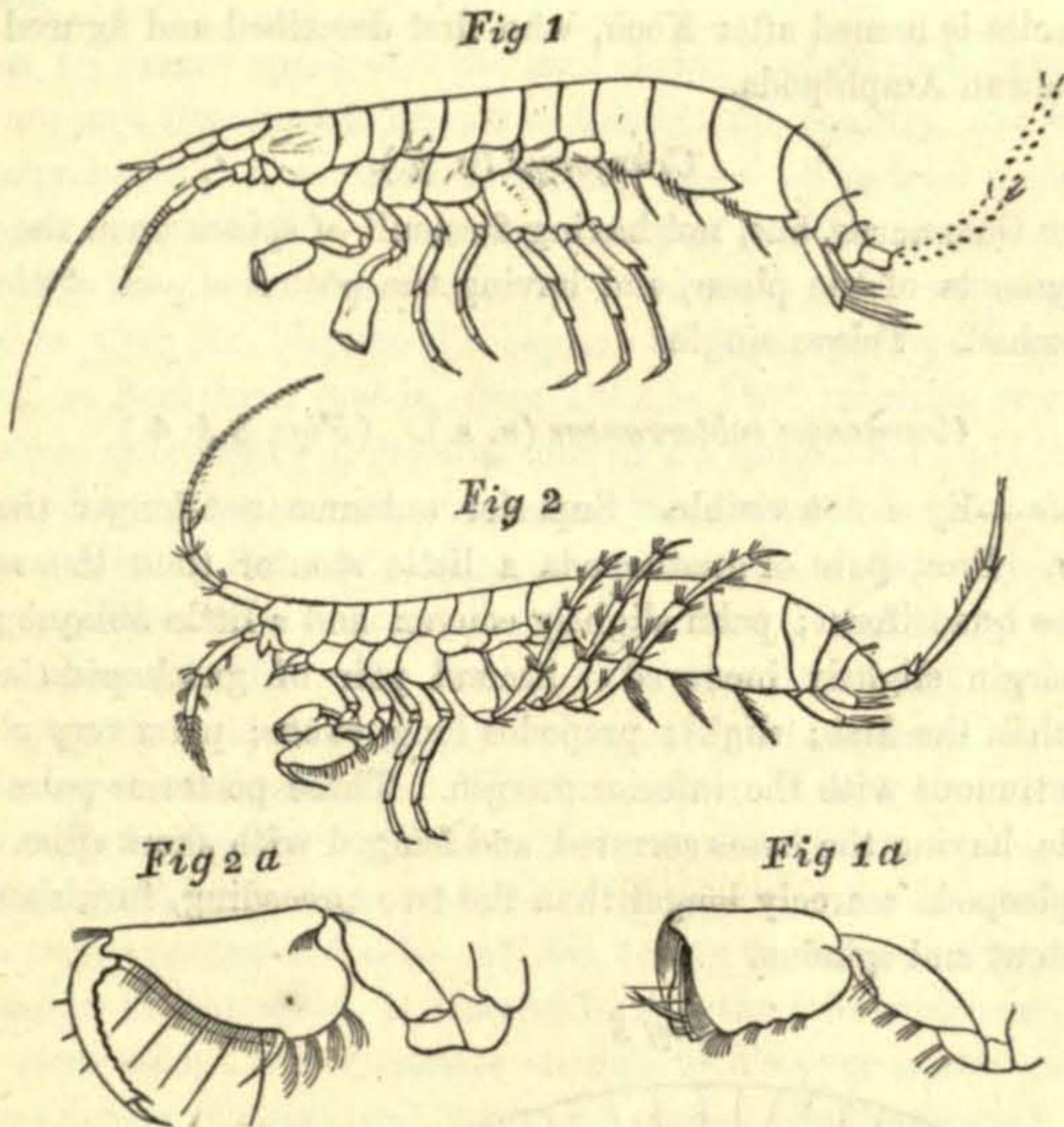
Niphargus fontanus (n. s.). (Figs. 2 & 2 a.)

Male.—Eye minute, yellow. Superior antennæ with the peduncle as long as the flagellum. Inferior antennæ with the last two articulations of the peduncle subequal; flagellum not so long as the last articulation of the peduncle.

First pair of gnathopoda a little smaller than the second; second pair of ditto having the propodos straight above and convex below, produced inferiorly and posteriorly, and fitting into a groove in the carpus; the palm as long as the superior margin, very oblique, waved and fringed with a series of equidistant solitary hairs, and one great moveable spine that antagonizes with the apex of the dactylos. Dactylos slightly curved, unguiculate, armed with a single tooth on the inner margin. The three anterior segments of the pleon terminating posteriorly and inferiorly in a point. Posterior pleopoda with the first articulation of the long ramus longer than the second, and the entire member nearly as long as the pleon.

Length about $\frac{1}{2}$ an inch.

Of the specimens of this species that were kindly sent to me by the Rev. Mr. Hogan, those from Corsham differ somewhat from the above in having the hands somewhat less elongate, and in the posterior pleopoda having the second articulation of the long ramus much shorter than the first. But this, as pointed out by Schiödte, is probably a sexual distinction.



Niphargus Kochianus (n. s.). (Figs. 1 & 1 a.)

Eyes not visible. Superior antennæ having the flagellum longer than the peduncle. Inferior antennæ having the flagellum as long as the peduncle. First and second pairs of gnathopoda subequal, having the propodos elongate, broader at the palm than at the posterior extremity; palm slightly advanced, and produced a little beyond the dactylos, armed with a long spine a little anterior to the inferior angle of the palm.

Three posterior pairs of pereopoda having the dactylos long and slightly curved, unguiculate, and furnished with a sharp tooth upon the anterior margin.

The posterior pair of pleopoda were missing in the only specimen that has yet been found; a solitary hair surmounts the four posterior segments of the pleon. In other respects the animal appears not to differ much from the other species of the genus.

Length about $\frac{3}{10}$ ths of an inch.

Its habitat is a pump in a house at Ringwood (Rev. A. R. Hogan). The species is named after Koch, who first described and figured these subterranean Amphipoda.

Crangonyx (*n. g.*).

Like Gammarus, but, not having fasciculi of spines upon the posterior segments of the pleon, and having the posterior pair of pleopoda unibranchied. Telson single.

Crangonyx subterraneus (*n. s.*). (Figs. 3 & 4.)

Male.—Eyes not visible. Superior antennæ not longer than the inferior. First pair of gnathopoda a little stouter than the second; propodos quadriform; palm slightly convex and a little oblique; inferior margin slightly incurved. Second pair of gnathopoda a little longer than the first; slight; propodos long, ovate; palm very oblique, and continuous with the inferior margin. Three posterior pairs of pereopoda, having the bases serrated, and fringed with short ciliæ. Posterior pleopoda scarcely longer than the two preceding, furnished with hairs stout and spinous.

Fig 3

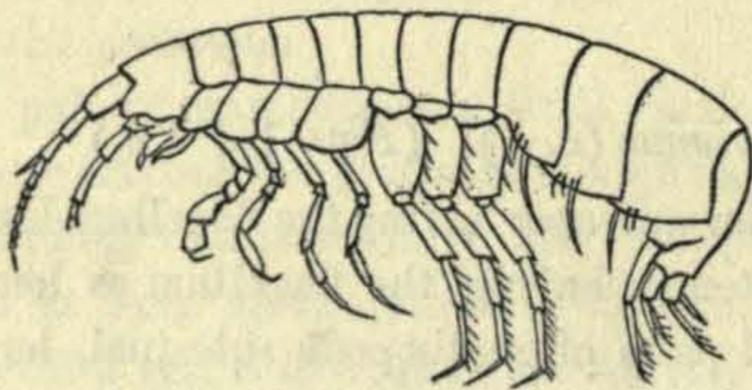
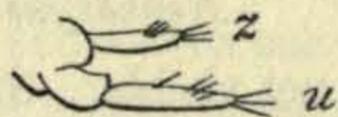


Fig 4



Length about 4-20ths of an inch.

Found associated with Niphargi in a well at Ringwood by the Rev. A. R. Hogan.

It is not improbable that this may be the *Gammarus subterraneus* of Leach; but we have no means of ascertaining.

The name of the genus is derived from *κραγγον* and *νυξ*.