

directè antrorsum extendit; ad quarum radices aliæ duæ, multò breviores. Corpus ferè pellucidum, celerrimè movetur saltando ut Pulex, sed præcipuè extra aquam. Pedum secundum par chelarum instar latum. Inter pedes et caudam alia sunt sive Appendices, sive pedes, graciles et breves quibus ova adhærere probabile est ut in Locustis. Cauda cirrorum fasciculo constat. In litoribus sub lapidibus innumeræ inveniuntur.

"*Pulex fluviatilis*, q. An à marino differat. F. W. Pedum quinque paria posteriora longa et gracilia sunt, duo capiti proxima breviora, non chelis sed (ni fallor) hamulis donata, ut in Squillis. Juniores matribus adhærent, quæ in circulum ferè se contorquent, et pullos amplectuntur. A capite duo procedunt Antennarum paria. Quæ in nostris rivulis sunt, non saltant ut marinæ, sed incurvant se et natant podicem exerendo satis celeriter. Hæ in aquis calidis in specu *Custoze* prope *Vincentiam* in *Italia* inveniuntur, ubi nulla animalia vivunt."

Of these three notices the first probably refers, as pointed out by Pallas himself, to *Oniscus volutator*, Pallas, 1766; the second, to judge by the short upper antennæ, the large-handed second feet, and the saltatory motion, especially out of water, no doubt principally refers to *Oniscus gammarellus*, Pallas, though the attendant query implies that species of *Gammarus* were also in view; the third notice evidently includes two species, that from the warm springs of *Custoza* in Italy being, Boeck says, *Gammarus pungens*, while the other is obviously the common fresh-water *Gammarus pulex*.

1728. FRISCH, JOHANN LEONHARD, born 1666, died 1743 (Hagen).

Beschreibung von allerley Insecten in Teutschland, Nebst nützlichen Anmerkungen Und nöthigen Abbildungen Von diesem kriechenden und fliegenden Inländischen Gewürme, zur Bestätigung und Fortsetzung der Gründlichen Entdeckung, So einige von der Natur dieser Creaturen herausgegeben, und zur Ergänzung und Verbesserung der andern. Siebender Theil. Samt einer Vorrede, darinnen von Ulyssis Aldrovandi Buch von den Insecten ausführliche Meldung geschicht. Berlin, 1728.

In part vii., section xviii., page 26, is headed "Vom Krebs-formigen Wasser-Wurm." Of this he says, "Der grösste wird etwan Zoll-lang die Übereinkunft mit Krebsen, der

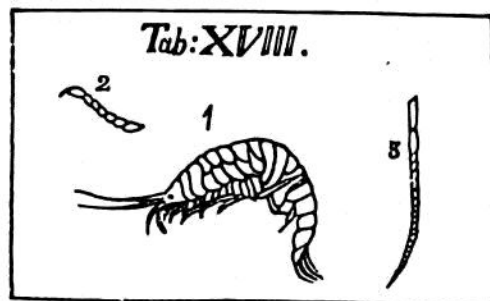


Fig. 5.

depicted on pl. xviii. figs. 1, 2, 3. The whole plate is reproduced in the accompanying woodcut.

Gestalt nach, leidet gar wohl, dass man ihm davon einen Nahmen giebt, weil er noch keinen hat." With the longer upper antennæ he thinks it feels what is in front of and beside it, with the smaller lower ones it feels what underneath might do it harm or supply it with food. He concludes that it cannot be one of the insects which undergo further transformation. Its fresh-water habitat, and the figures which Frisch gives, justify Boeck's opinion that *Gammarus pulex* is here in question. It is