agreement with Leydig and contrary to the view of Spence Bate, as organs of smell. The fact that they are longer in the blind *Gammarus puteanus* and *Asellus* from the wells than in *Gammarus pulex* and *Asellus aquaticus* is regarded as a natural compensation made to the former for their want of sight. To the plumose hairs at the base of the upper antennæ, which Sars and others accept as auditory organs, like those described by Hensen for the Decapods, Rougemont disallows this function, on the ground that to the well- and cave-shrimps hearing would be of no particular service, and that in Amphipods neither auditory vesicle nor otolith has been discovered. He regards the hairs in question as ministering to the sense of touch, and were there any word to express something intermediate between the senses of touch and hearing, he would be willing to adopt it for the function of these organs. He agrees with some earlier writers in ascribing to the cone of the antennary gland a sense of smell, and supposes, while the cylinders of the flagellum smell more distant objects, the cone takes cognizance of food approaching the mouth, an ingenious but not highly probable suggestion. He mentions that Felix Plateau, who like Spence Bate recognised eyes in *Gammarus puteanus*, briefly described these organs as "dreieckig mit sphärischen Winkeln, klein und pigmentlos." But de Rougemont himself had never been able to find any Krystallkörperchen, and is convinced that these animals cannot see and distinguish objects, though the light, penetrating their transparent skin to the rudiment of the optic nerve, may produce a disagreeable impression, which leads them to prefer a safe obscurity.

To the single species, *Gammarus puteanus*, Koch, are referred all the following forms:—I. Form. *Gammarus minutus*, Gervais. *Crangonyx subterraneus*, Sp. Bate. II. Form. *Niphargus kochianus*, Sp. Bate. III. Form. *Gammarus puteanus*, Caspari. *Gammarus puteanus*. Hosius. *Niphargus fontanus*, Sp. Bate. IV. Form. *Gammarus puteanus*, Koch. V. Form. *Niphargus stygius*, Schiödte. *Gammarus puteanus*, Koch, de Lavalette St. George, and Felix Plateau. VI. Form. A colossal specimen, 33 mm. long, from Neuchatel. These identifications were sharply criticised by Alois Humbert, in 1876.

1875. SCHIØDTE, J. C.

Krebsdyrenes Sugemund. Med fem Kobbertavler. Naturhistorisk Tidsskrift 3. R. 10. B. Kjøbenhavn. 1875. pp. 211–252.

Schiødte considers that the structure of the mouth in the Amphipoda offers three principal types, best distinguished by the connections which determine the movements of the mandibles. The first type belongs to the *Gammarus- Caprella*-forms. Here the mandibles are short, three-sided, with broad triangular base, the outer angle of which is socketed by a short process in the pleural border of the head. On this process and the outer side of the shaft they have an oscillating movement, but being free from the special arrangements for regulating their movements which are found in the other two types, he calls this group Eleutherognatha, defined by the formula, "*Mandibulæ trigonæ, condylo articulario antico carentes. Labrum planiusculum, transversum, simplex.*" The lower lip he describes as having four comparatively soft cushion-like lobes and two more strongly chitinized and calcified horns directed backwards, stiffer than the cushions, yet yielding towards their free ends, so as to constitute a spring stiff enough to hold the mandibles up for their oscillation, yet elastic enough to yield to pressure, and which he therefore designates as "*processus mandibularii labii inferioris.*"

The second type includes most of the *Lysianassina*, Dana. Here, in addition to the arrangements above mentioned, "from the front end of the shaft, on the upper side, in front of the palp, there issues a club-shaped, articular process, rounded at the end, which fits into a corresponding cup on either side of a saddle-shaped process on the palate, close behind