"A. The youngest Zoea stage without eyes in the development of *Leucifer reynaudii*. Taken north of New Guinea, off Mariannes, March 1875."

"Specimens in this stage were also taken north of Japan."

The second stage differs from the first in having increased from $\frac{20}{1000}$ (0·5 mm.) to $\frac{27}{1000}$ (0·67 mm.) of an inch, measured from the apex of the rostrum to the base of the hairs on the telson. The appendages are similar to those of the first Zoea, but the carapace is elongated, and a pigment-spot represents the future compound eye which is now appearing.

The Zoea previous to maturity loses the caudal spines by shedding the skin.

The third stage Professor Brooks has observed in several specimens, more than fifty having passed through it in the laboratory. The form now corresponds in character with our figure on Pl. LXXIX. fig. 1, which is 1 mm. in length, and was taken in September 1875, in lat. 2° 34′ N.

Claus in his Crustaceen System (Taf. ii. fig. 1) has also figured this stage as an *Erichthina* from a specimen that was taken in the Gulf of Messina, and which he says corresponds with the "larva of *Leucifer* by Willemoes Suhm," but which differs from Suhm's specimen as well as from that figured in this Report, on Pl. LXXIX., which was stained and mounted in Canada balsam by Willemoes Suhm, and is probably that from which he made his drawing, in having the lateral extremities of the carapace rounded as in the young of *Penæus*, instead of being produced to points, as in Suhm's drawings and our figure.

The description agrees with the figure given by Professor Brooks,[1] except in such points as may be attributed to the treatment our preserved specimen received in mounting, or in such details as will be pointed out.

The ocellus is present in our specimen in the form of a circular transparent lens.

The eye is represented by a pigment-spot, which Professor Brooks figures as being on the outer side of the second pair of antennæ, and posterior to the cerebral ganglion, whereas in our specimen it is on the inner side of the antennæ and in contact with the cerebral ganglion, and is much larger and more conspicuous than in Professor Brooks' figures.

The first pair of antennæ consists of a long cylindrical basal joint and a slender terminal one, which ends in two rather long sensory cilia. The second pair is made up of a short, stout, semi-articulate peduncle that supports two branches, one of which, the scaphocerite, is single-jointed and the other biarticulate, each being tipped with several long hairs. The scaphocerite in Brooks' and Suhm's figures is multiarticulate. These are the chief organs of locomotion at this period.

The mandibles cannot be easily determined in our sole specimen, but Professor Brooks describes them as being "cutting blades which are visible in a dorsal view."

"During the first Protozoea stage it (the mandible), has only one denticle, which is

[1] *Loc. cit.*, pl. iv. fig. 42.