

species, a third, which, however, he did not name. It has since been described by Grobben¹ as *Doliolum rarum*. Keferstein and Ehlers added no new species to the list, but erroneously regarded the *Doliolum ehrenbergii* of the Mediterranean, which they investigated, as being *Doliolum denticulatum*.

For a long period subsequent to Keferstein and Ehlers' work no further investigations were made upon *Doliolum*. More recently, Fol, Grobben, Uljanin, and others have by their important observations done much to complete our knowledge of the structure and development of the various species, and to work out the details of the complicated life-history which is now known, thanks mainly to the investigations of Grobben² and of Uljanin,³ to be as follows:—

The embryo becomes a tailed larva which develops into an asexual form known as the "Nurse" ("Amme"), which I propose should be named Blastozoid. This asexual form is characterised by having nine muscle bands round the body, the stigmata few in number and confined to the posterior end of the branchial sac, an auditory organ on the left side of the body, a ventrally-placed gemmiparous stolon close to the heart, and by the possession of a dorsal outgrowth from the body which is directed backwards (Pl. III. fig. 9). The young buds formed on the ventral stolon migrate across the body, and become attached to the dorsal outgrowth in three rows, a median and two lateral, and then proceed to develop into the members of the second generation, the blastozoid which produced them being the first.

The second or sexual generation is polymorphous, and includes three distinct forms, which are known as nutritive forms, foster forms, and reproductive forms. For these I propose the names Gastrozoid, Phorozoid, and Gonozoid respectively. The nutritive forms (gastrozooids) are produced from the lateral buds. They remain attached to the dorsal outgrowth of the body of the nurse, and serve to supply it with nutriment. They differ considerably in appearance from the other forms of *Doliolum*, and their reproductive organs remain undeveloped. The foster forms (phorozoids) have the ordinary barrel-shaped body, surrounded by eight muscle bands. They are set free from the nurse, but always retain as a ventral outgrowth the remains of the stalk by means of which they were formerly attached. On this ventral outgrowth develop the buds which produce the third form of the same generation, viz. the reproductive animals. These buds of the reproductive form do not originate on the ventral outgrowth of the foster forms, but are derived from the proliferation of the original buds formed on the stolon of the blastozoid, and therefore belong to the same generation as the foster forms on whose bodies they afterwards develop. The reproductive forms (gonozooids) are very like the foster forms in appearance, but have no ventral process. Finally,

¹ *Arbeit. d. zoolog. Instit. z. Wien*, Bd. iv. Hft. 2, 1882.

² *Doliolum und sein Generationswechsel, &c.*, *Arbeit. d. zoolog. Instit. z. Wien*, Bd. iv. Hft. 1.

³ *Fauna u. Flora d. Golfes v. Neapel*, Monogr. x.; *Doliolum*.