

In *Fungia* buds are found to develop especially in parts of the corallum in which intensive growth occurs resultant on damages of the corallum (BOSCHMA, 1923). This may hold in an equivalent way for some cases of budding in *Echinopora*. When, e.g., radiating rows of buds grow on folds of the corallum, we doubtless are dealing with the development of buds in places predisposed for this phenomenon. As already stated, however, the normal development of corallites on both sides of vertical plates shows that light is the chief factor here, accordingly there is little reason to assume that budding as in *Fungia* is of much importance in *Echinopora*.

Concerning the further development of the stalked buds the available amount of light is the chief factor determining their shape. Buds which have arisen at a spot which during the further growth of the colony receives very little light (this may be caused by a more or less downward bending of the new margin of the colony) show a strong tendency to develop long stalks (fig. 6). The stalks grow out towards the margin of the colony in order that the polyps may receive as much light as possible. These buds, however, have little opportunity for their further development: often the amount of light in these more or less shut off places is too scanty for their remaining alive. In many cases one finds that a number of these buds, especially those which occupy the darkest region, have died, as, e.g. in the case of the corallum of fig. 6.

When, on the other hand, a sufficient quantity of light can penetrate to the surface of the corallum where the stalked buds have developed, the stalks of these young corallites remain short (fig. 3). Growth of the buds then proceeds in a lateral direction and soon two or more buds unite laterally, forming a small compound corallum. In the course of further development this process continues and soon a large part of the surface, which originally was devoid of polyps, is covered by corallites (fig. 5). Besides the original polyps (the buds) there develop a great number of new polyps in the ordinary way: they arise in the coenosarc between the existing polyps. Different stages of this gradually covering of the lower surface of a colony by a plate-like growth which has originated from isolated buds, are to be seen in fig. 4. The right part of this figure shows a number of isolated buds and a great quantity which have already united into rows and patches of corallites. The left part of the same corallum is almost completely covered by corallites; small open places between these indicate that originally this part of the colony was devoid of polyps.

The manner of budding described here brings about a quite different shape of the colony. By this process the appearance of the colony resembles that of the colonies of *Echinopora*, which grow out vertically. In these colonies, however, both sides of the vertical plate possess corallites at the very outset, whereas in the colonies described above the similarity of both surfaces has been acquired in a secondary manner. Nevertheless in both cases we are certainly dealing with the same phenomenon.

LITERATURE.

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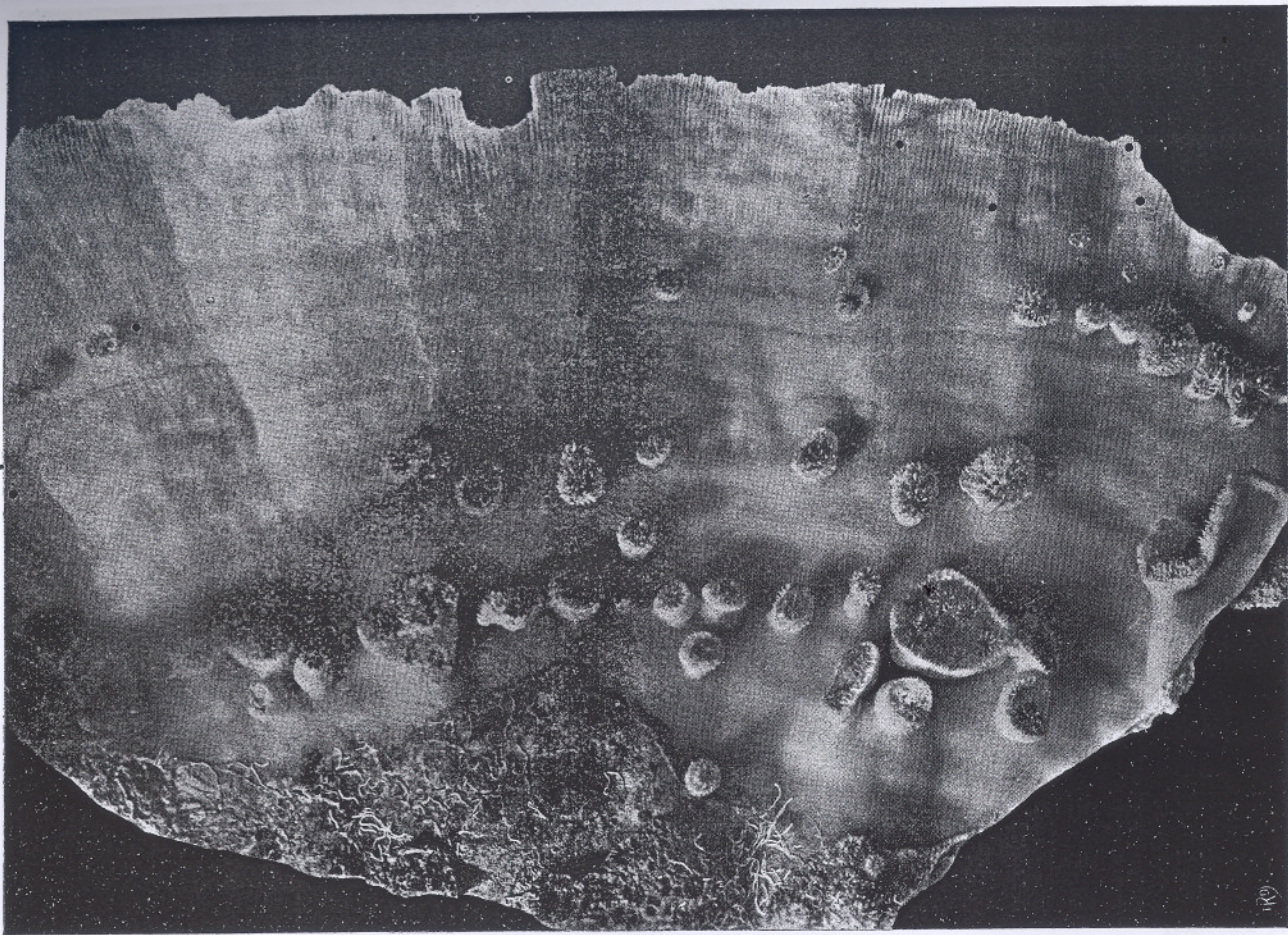
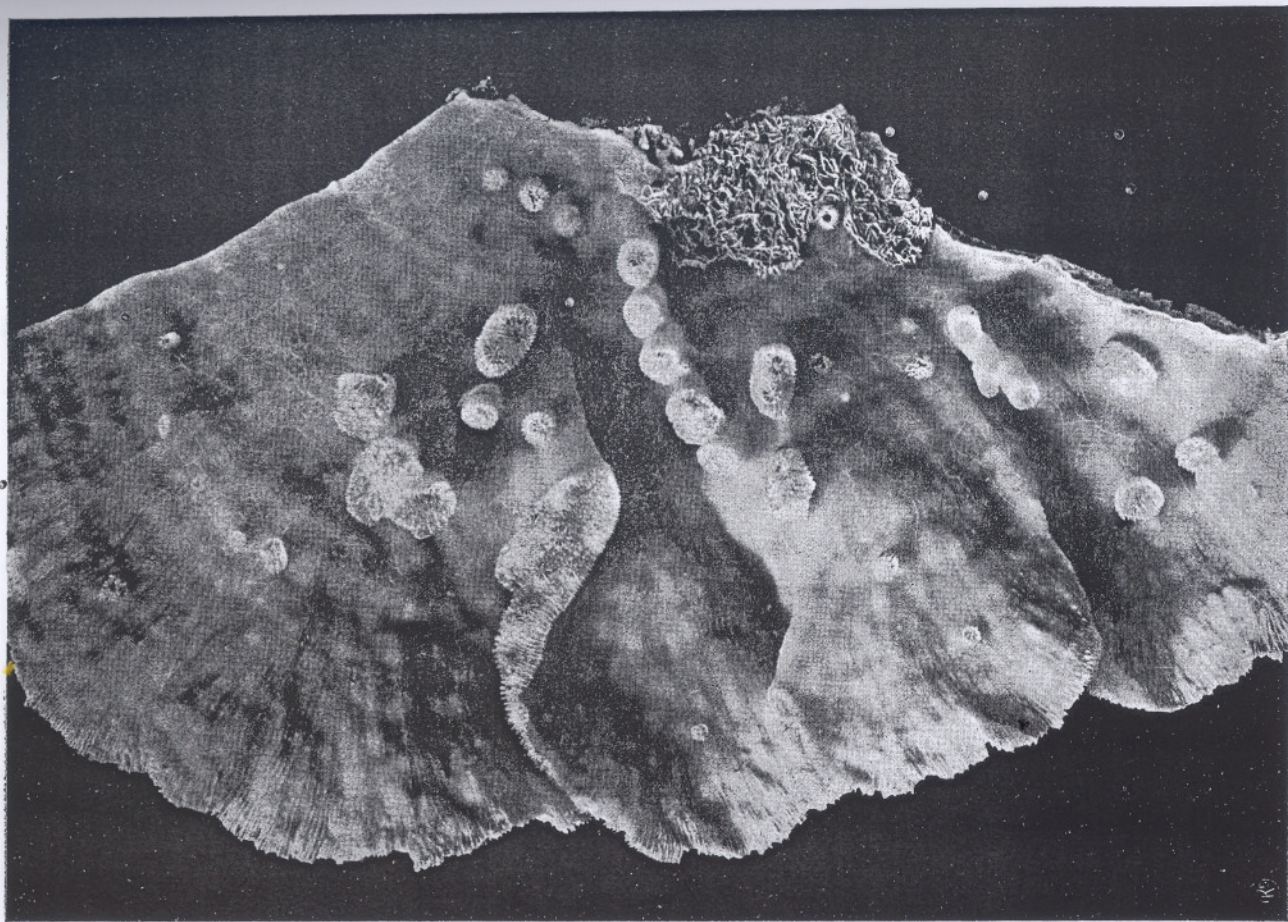


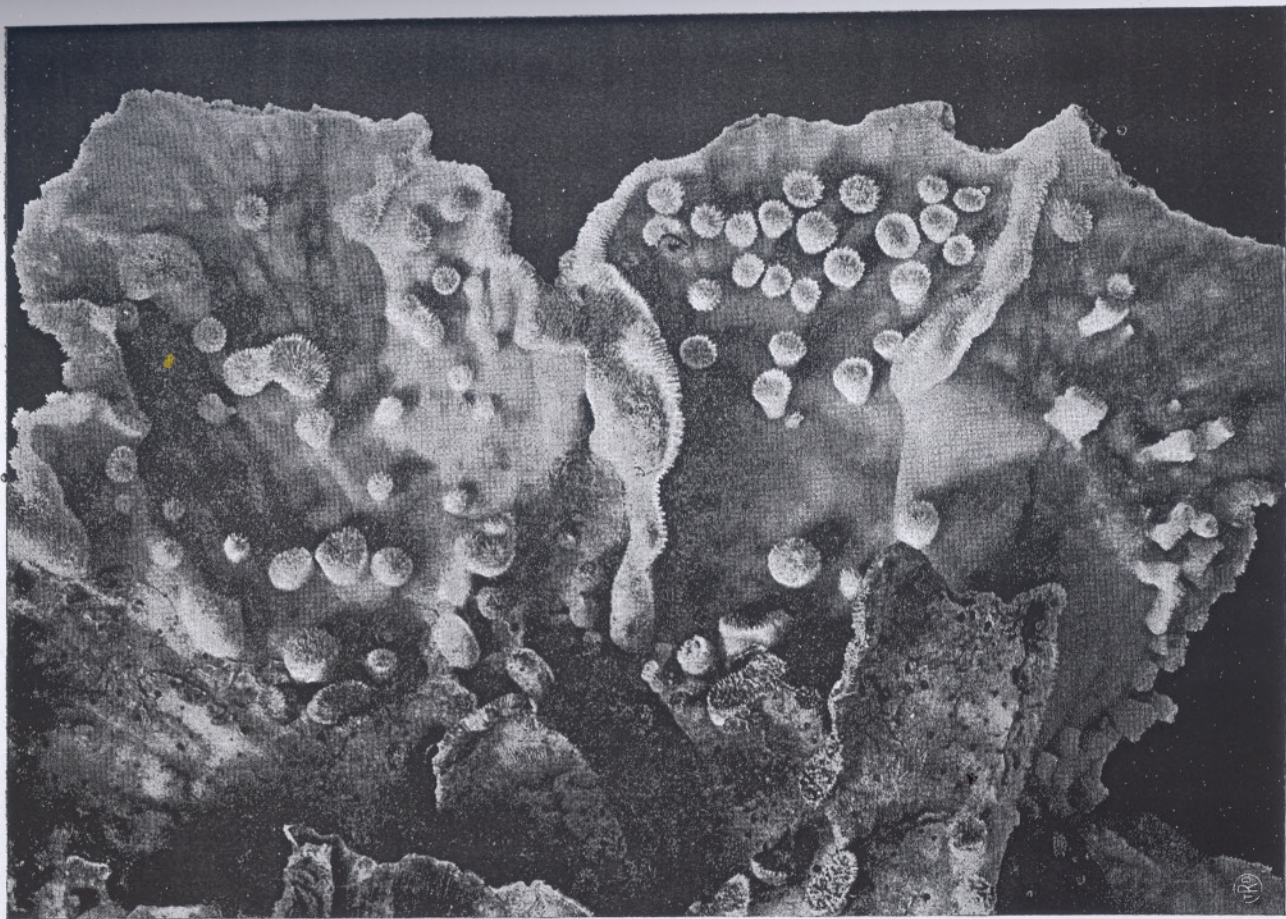
Fig. 1. *Echinopora lamellosa*: lower surface of a colony from the island Hoorn, Bay of Batavia, 2 July, 1929, with stalked buds in concentric rows. Natural size.

BOSCHMA phot.



BOSCHMA phot.

Fig. 2. *Echinopora lamellosa*: lower surface of a colony from the island Hoorn, Bay of Batavia, 2 July, 1929, with stalked buds in lines radiating from the central of the colony. Natural size.



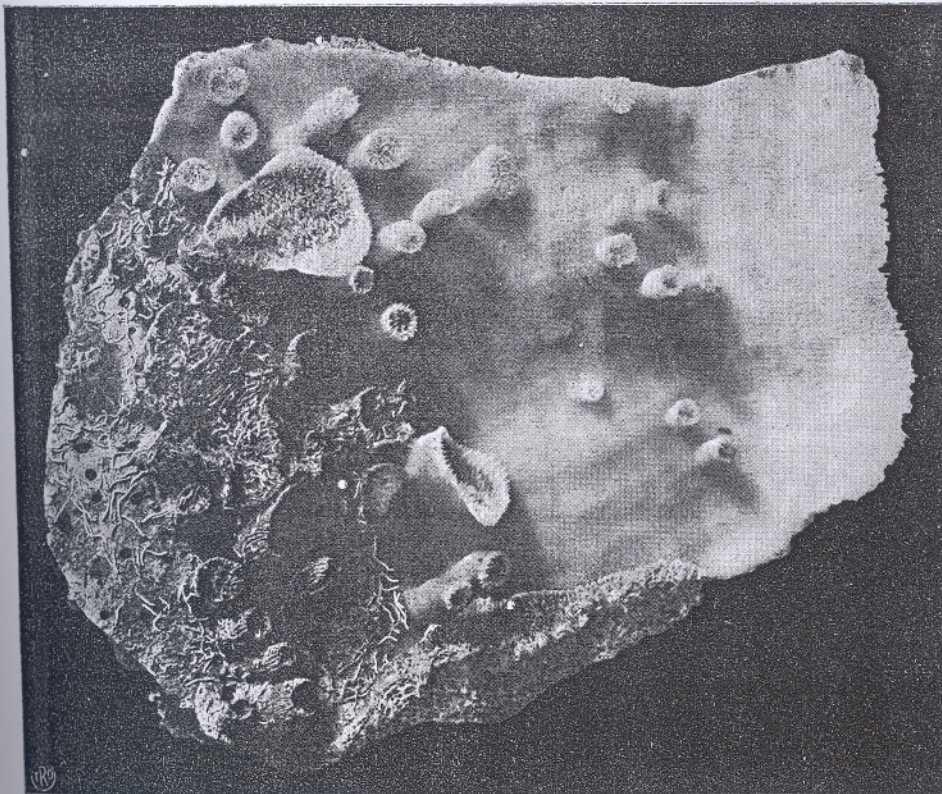
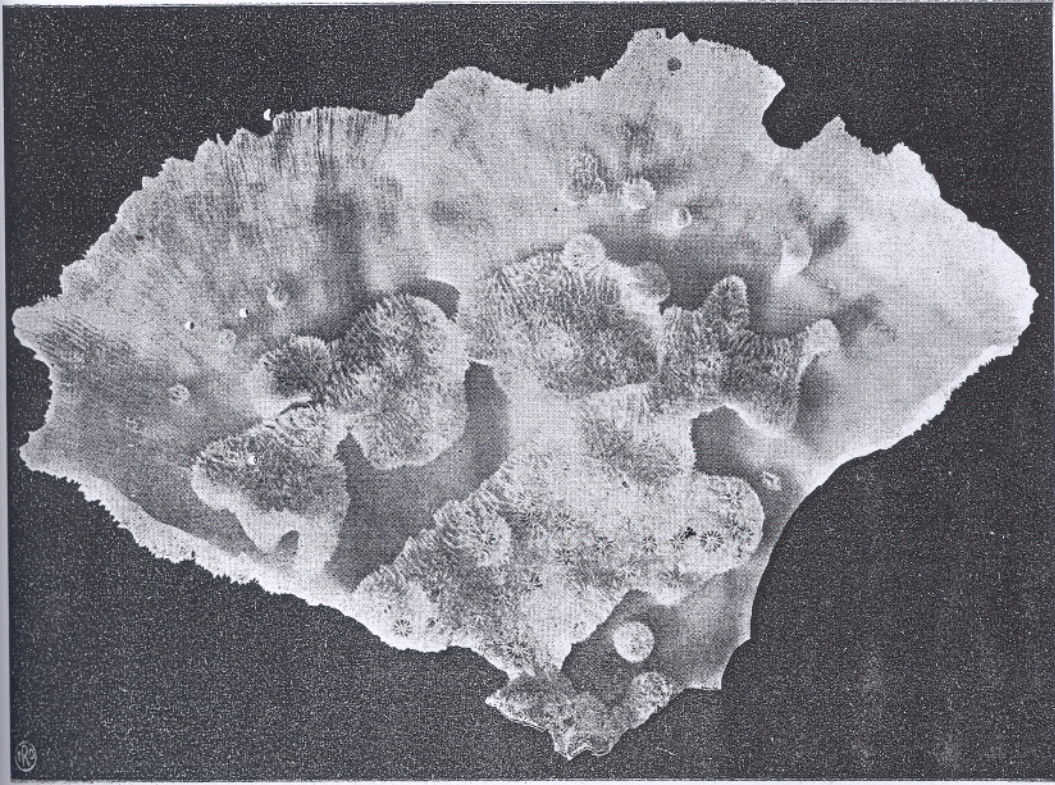
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Fig. 3. *Echinopora lamellosa*: lower surface of a colony from the island Onrust, Bay of Batavia, 24 January, 1929, covered with numerous stalked buds. Natural size.



BOSCHMA phot.

Fig. 4. *Echinopora lamellosa*: lower surface of a colony from the island Edam, Bay of Batavia, 19 June, 1929, covered with an extensive number of stalked buds, which are uniting coherent plates. Natural size.



BOSCHMA phot.

Fig. 5-6. *Echinopora lamellosa*: lower surface of colonies from the island Hoorn, Bay of Batavia, 2 July, 1929. Fig. 5. Stalked buds part of which have fused. Fig. 6 Stalked buds of great length. Natural size.