

present it is probably impossible to lay down any rules relating to them.

If we take into account the exceptions here mentioned, we arrive at the result that in the higher groups, viz. squids and fishes, special light-organs are known mainly in oceanic forms belonging to warm areas.

Luminous fishes.

Among the fishes the luminous forms are mostly found in the families Stomiatiidæ, Sternoptychidæ, Scopelidæ, and Ceratiidæ.

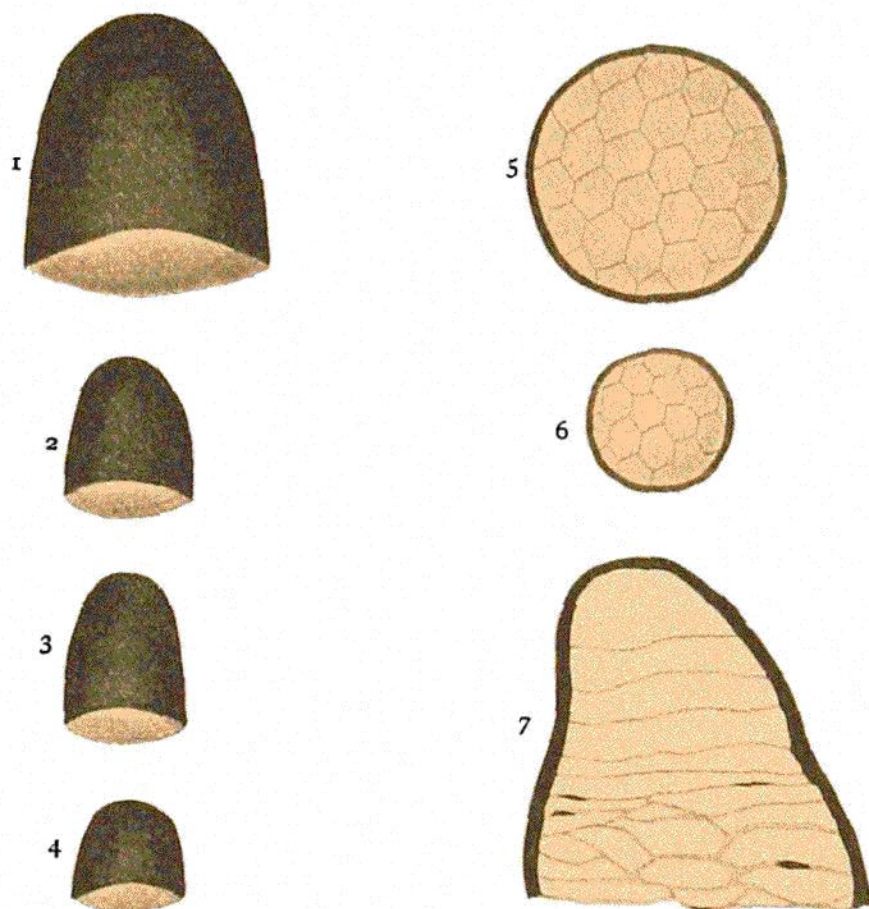


FIG. 493.

1. The largest photophore from the ventral series between the pectoral and the ventral of *Cyclothone signata*, Garm., and *C. signata alba*, A. Br.
2. The largest photophore from the ventral series between the pectoral and the ventral of *Cyclothone microdon*, Günth., and *C. microdon pallida*, A. Br.
3. The largest photophore from the ventral series between the pectoral and the ventral of *Cyclothone livida*, A. Br.
4. The largest photophore from the ventral series between the pectoral and the ventral of *Cyclothone acclinidens*, Garm.
5. The largest photophore from the ventral series between the isthmus and the ventral of *Cyclothone signata*, Garm.
6. The smallest photophore from the ventral series between the isthmus and the ventral of *Cyclothone signata*, Garm.
7. Reflector cells of a photophore from the ventral series of *Cyclothone microdon pallida*, A. Br.

(After Brauer.)

After carefully examining the specimens belonging to these groups captured by the "Valdivia," Brauer pointed out that a certain regularity in the arrangement of the light-organs seems