

1 : 5.2 to 1 : 7), and he imagines this to be due to differences in age. In the other species of this genus at all events the relation is usually 1 : 7 or 8. Further investigations are necessary to explain these relations.

*Malacosteus* also has a relatively large eye, but in this genus as well as in other Stomiatiidæ we must suppose that important vertical migrations occur. Thus we see from the table (Fig. 490) that *Photostomias guernei* has been captured at night in comparatively shallow water, and its eyes are considerably larger than those of the fishes which constantly live at great depths (see Fig. 67, a, p. 86).

The pelagic decapod crustacea show a similar correspondence between the development of eyes and vertical distribution (see table, p. 668). In the two species living above 150 metres the ratio of carapace to eye is 5-7, and in the five species with a maximum distribution about 500 metres the ratio is 6-11, while in the four species living below 500 and mostly beyond 1000 metres the ratio is 9-20.

Although in fact many cases as yet seem inexplicable, there seems to be reason for supposing that the efficiency of the eyes decreases with the decreasing intensity of light as we descend into deep water. That we cannot fully explain all cases seems to be a natural consequence of the fact that our knowledge of the vertical distribution of pelagic fishes is still imperfect, being based mainly on the closing-net hauls of the "Valdivia" and the long horizontal hauls of the "Michael Sars," and both these expeditions were of very short duration. Further investigations will probably furnish many interesting details as to differences within the regions recognised by us, for we are aware that various kinds of eyes occur in the region above 500 metres, such as stalked eyes, telescopic eyes, as well as eyes built on the principles of the common type of fish eye.

Stalked eyes seem to be peculiar to larval stages, and in certain cases are known to develop into normal eyes even during the larval stage (Lo Bianco). They seem to occur only in the uppermost layers, where all transparent fish larvæ live. Considering the insufficiency of our knowledge of the development of pelagic fishes, I do not venture to guess to what species our stalk-eyed larvæ belong.

Telescopic eyes are found only in fishes from depths less than 500 metres. We have observed them in *Argyropelecus*, in a new genus closely related to *Dysomma* (see Fig. 540, p. 746), in *Opisthoproctus*, and also in leptocephali. Fig. 500 represents