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Report on the otolith photograph exchange scheme

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Progress

1. Cod Otoliths. Five more series of cod otolith photographs taken from the 1962 Exchange samples have been sent out, together with the otoliths themselves, and are nearing completion of their circulations. Eleven series in all have now been prepared and sent out. Reports on the fourth and fifth series, from subareas 3K and 2J respectively, have been sent to readers taking part in the scheme.

So far, results from the recirculation of samples from the 1962 Exchange scheme show better agreement than on the original exchange, because the one reader (Spain) who consistently underestimated ages then has revised his methods. However, the readings from other countries which also took part in the 1962 exchange show that there are still fundamental differences in the way rings on otoliths are interpreted. There are indications that some of the individual readers who took part in both the 1962 and the present exchanges have been less consistent in their interpretations than might have been expected. If this is so, it will be shown in the separate reports on each series.

2. Redfish Otoliths. Following the recommendations of the Sub-committee on Ageing Techniques at the 1965 meeting a sample of 38 redfish otoliths was obtained from Dr. Neesteroff for photographic tests. All the otoliths were cut with the German diamond saw and no modification of the cod otolith photograph technique was required. The results from these tests (Figures 1-6) show that there is no problem in obtaining satisfactory photographs of these otoliths. A slightly higher magnification was used, giving a print magnified 18.75 times instead of the standard x15 now used in the exchange schemes for all cod otoliths.

3. Silver Hake Otoliths. As these are viewed by reflected light against a dark background a completely different photographic set-up from that used for cod otoliths is required. Frighan and Jensen (1964) have described the method used at Woods Hole. In the present work a similar set-up has been used, with electronic flash illumination instead of microscope lamps; this allows a standard exposure to be used regardless of the size of the otolith. Some of the results are illus-

treated in Figures 7, 8 and 9, which show as much detail as can be seen using the ordinary otolith viewing methods.

(A paper describing this technique will be submitted for the ICNAF Research Bulletin).

4. Diamond Saw. A diamond saw similar in design to Dr. Meyer's has been completed at Lowestoft.

5. Validation Studies. The extent of English reading of otoliths from the ICNAF area is limited and no validation studies have been undertaken.

Future Exchanges

Eleven series from the 1962 Exchange programme remain to be photographed, but it is doubtful if anything will be gained from circulating some of these in cases where there was close agreement on the interpretations in the original exchange. Those 1962 samples from areas not previously covered will be circulated in the coming year. Additional samples from other readers will be welcomed.

The tests described above show that production of photographs of redfish and silver hake otoliths for exchange schemes is feasible. Redfish otoliths require the same special photographic apparatus as cod otoliths, and samples may be photographed most satisfactorily at Lowestoft or St. John's (if their apparatus is completed). If the Lowestoft Laboratory is asked to produce photographs for a Redfish otolith photograph exchange scheme, it is requested that only carefully prepared samples be submitted, as staff may not be available for the preparation of samples.

As there are few problems in photographing silver hake otoliths, the U.S.A. and other interested nations should be able to prepare series for an exchange programme without difficulty.

I would like to thank those taking part in the cod otolith exchange for their cooperation, and I look forward to their continued help in the smooth running of the scheme.

References

- Brigham, R. K. & Jensen, A. C., 1964. Photographing otoliths and scales.
Progr. Fish-Cult., 26, No. 3, 131-135.

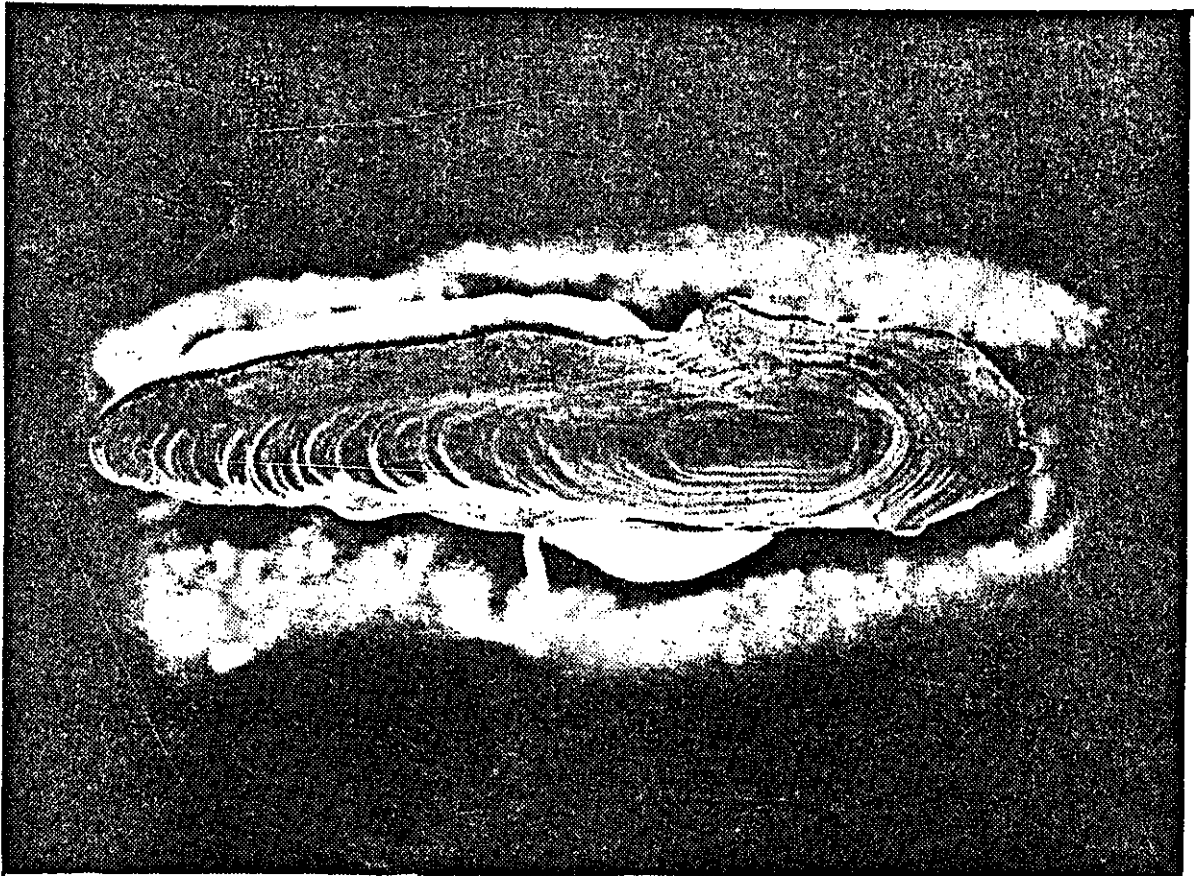


Fig. 1 and 2. Redfish otoliths photographed from sawn otoliths. From redfish measuring 33 and 35 cm respectively.

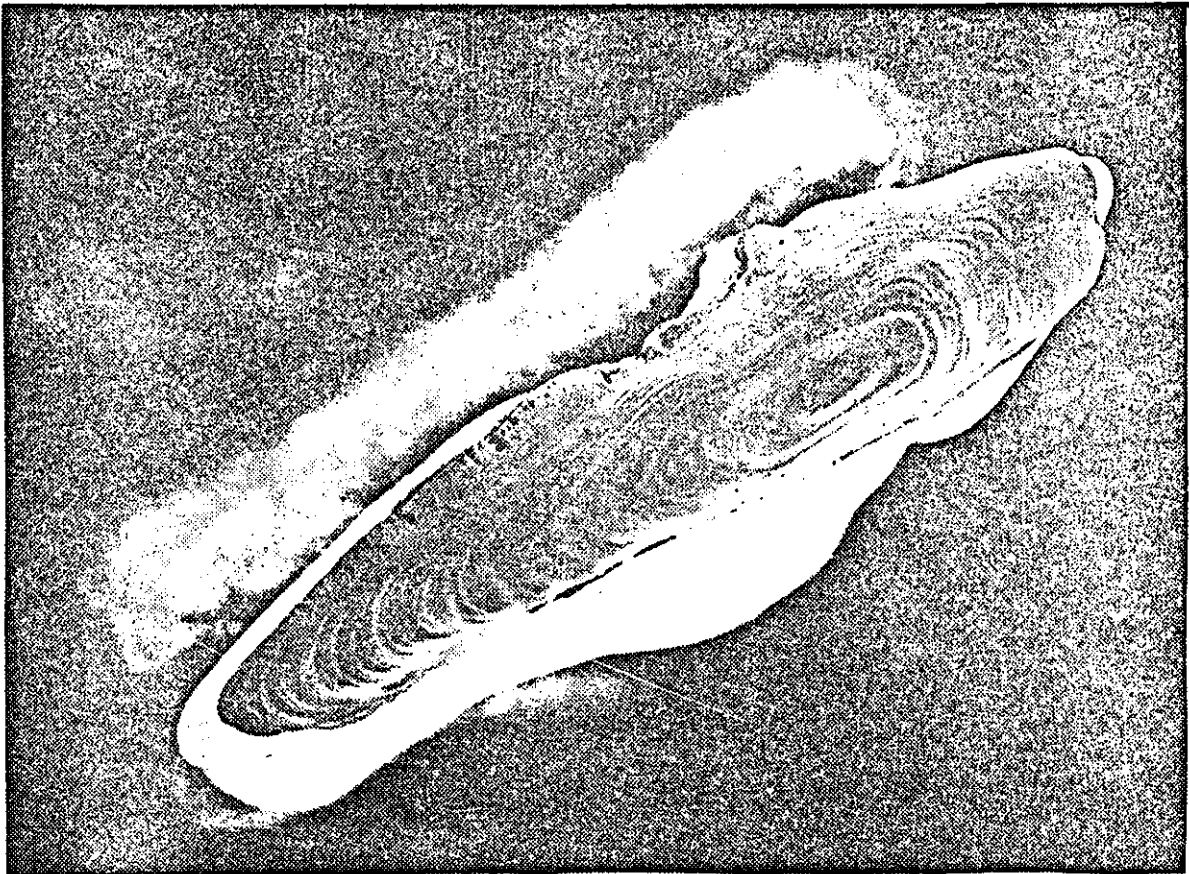
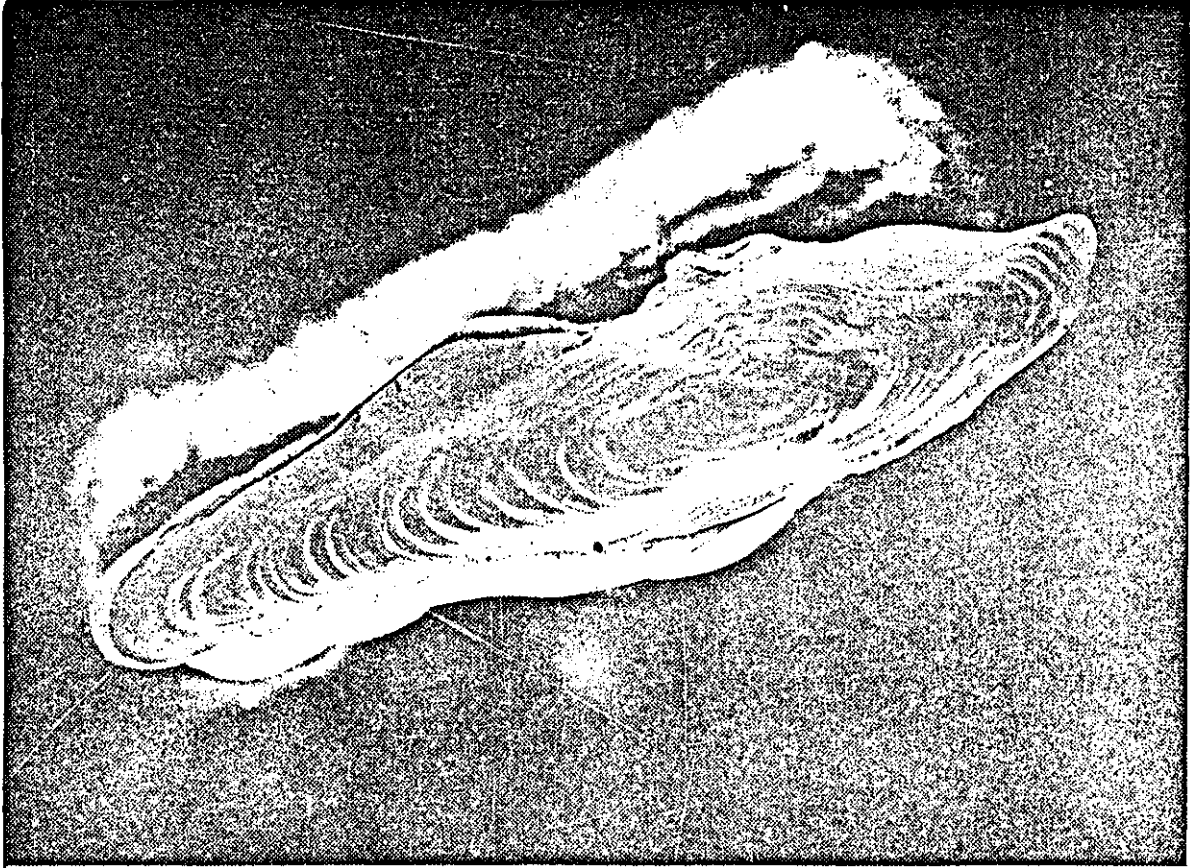


Fig. 3 and 4. Redfish otoliths photographed from sawn otoliths. From redfish measuring 38 and 39 cm respectively.

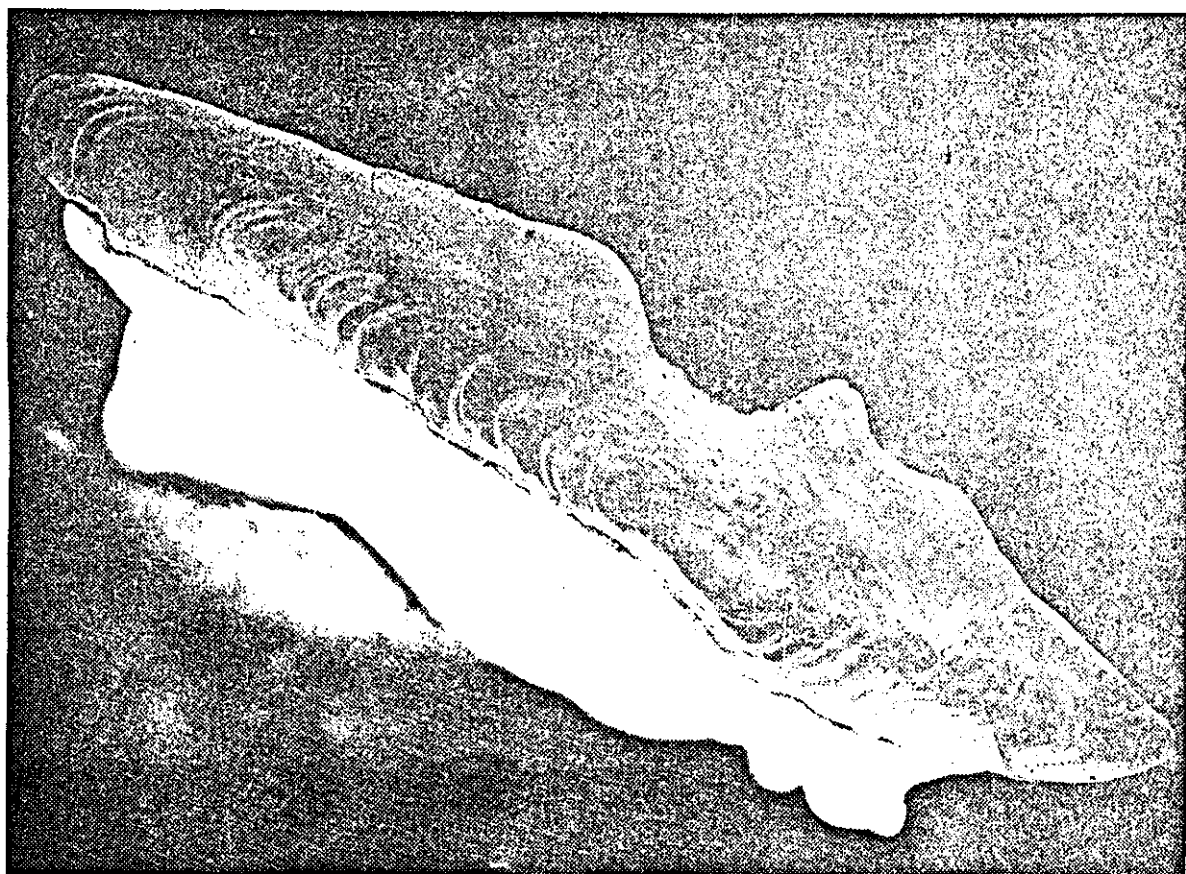
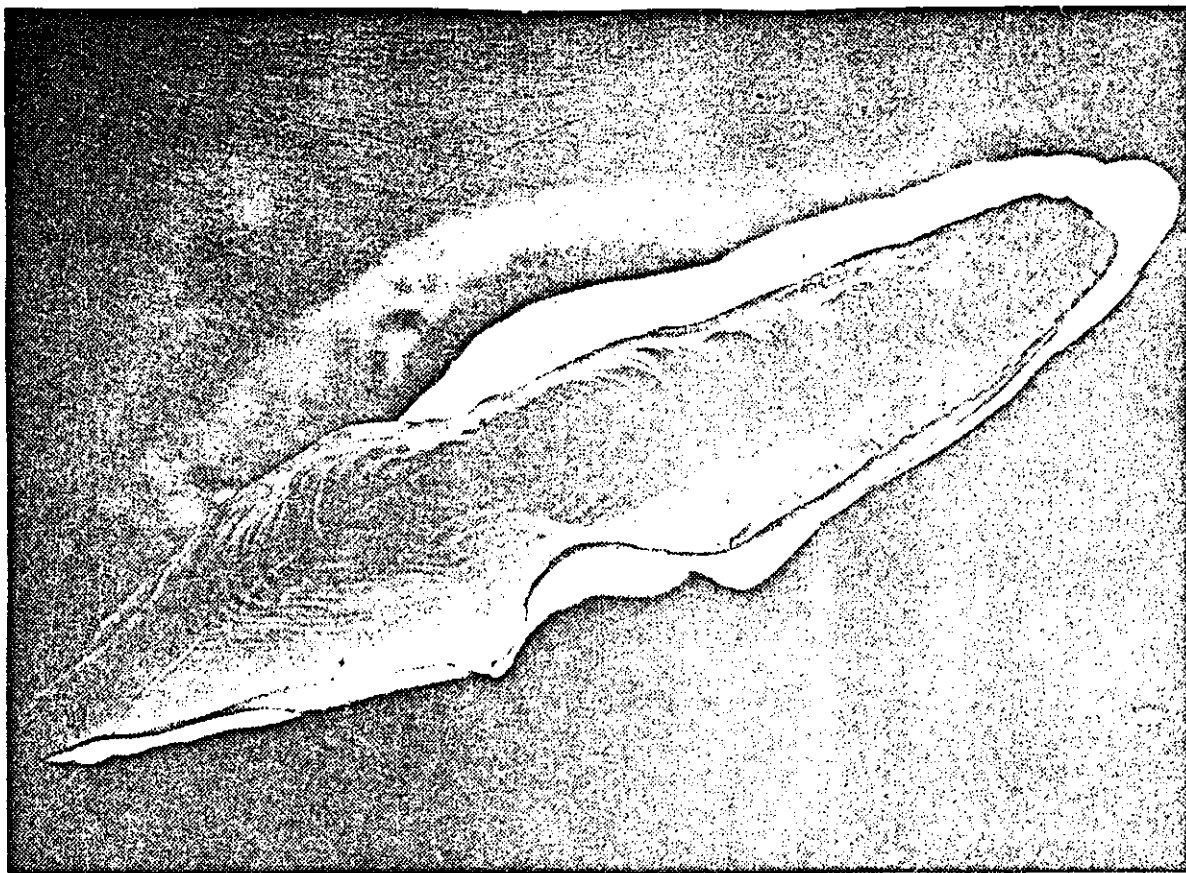


Fig. 5 and 6. Redfish otoliths photographed from sawn otoliths. From redfish measuring 50 and 51 cm respectively.

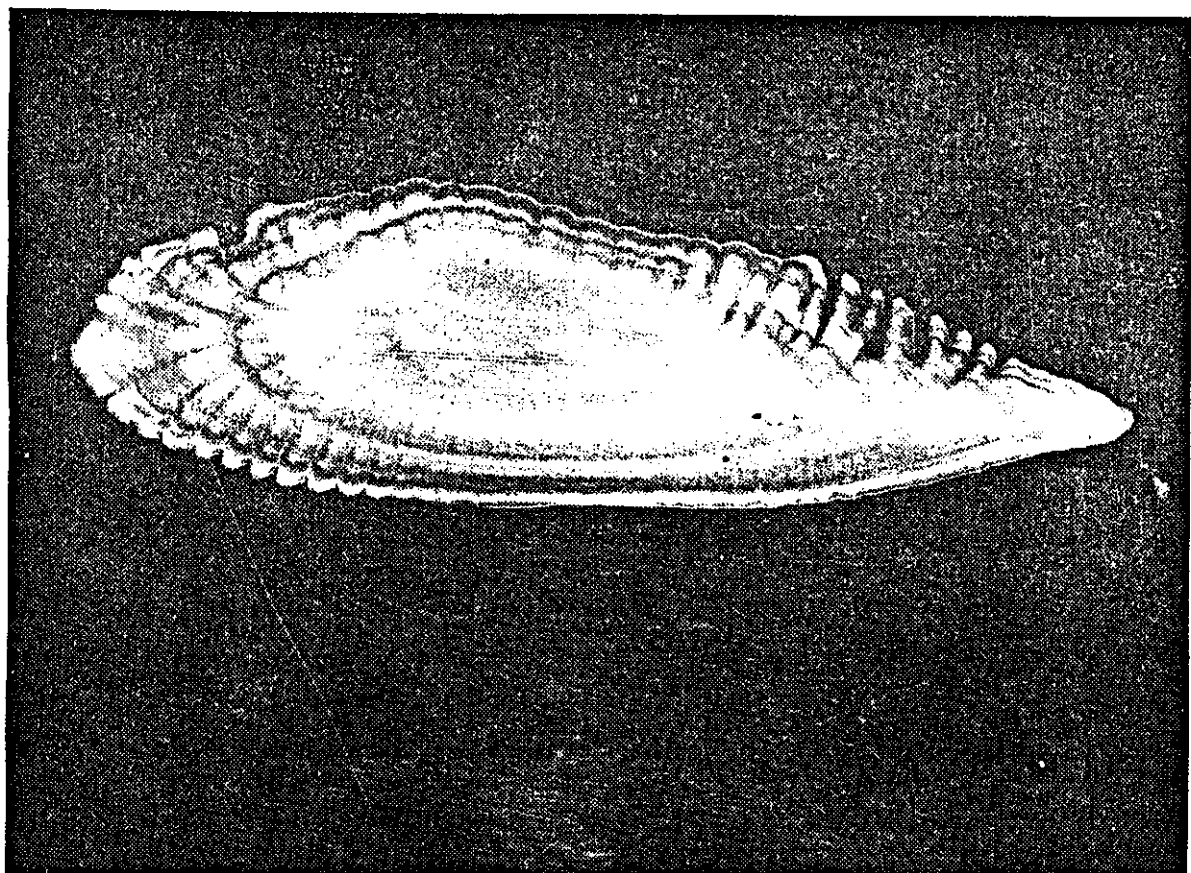
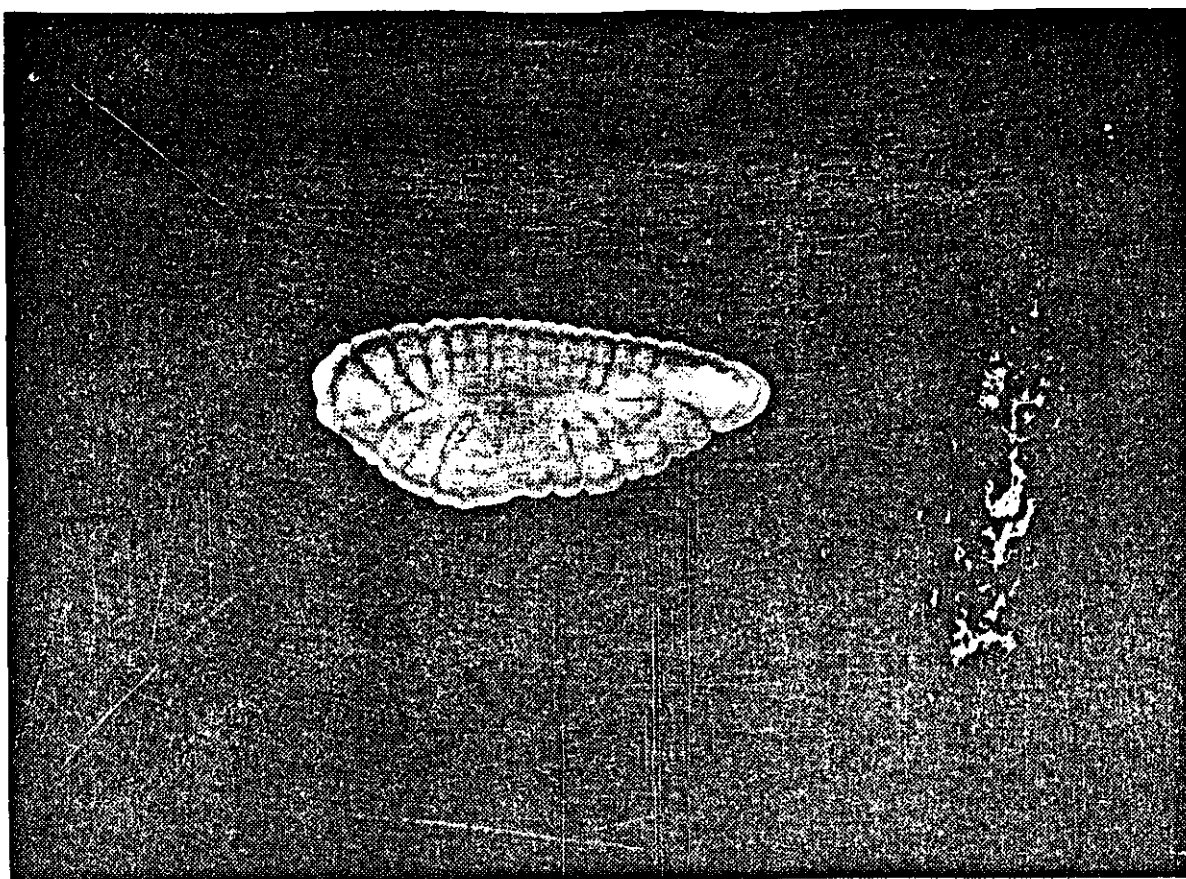


Fig. 7 and 8. Silver hake otoliths. From silver hake measuring 16
37 and 49 cm respectively.

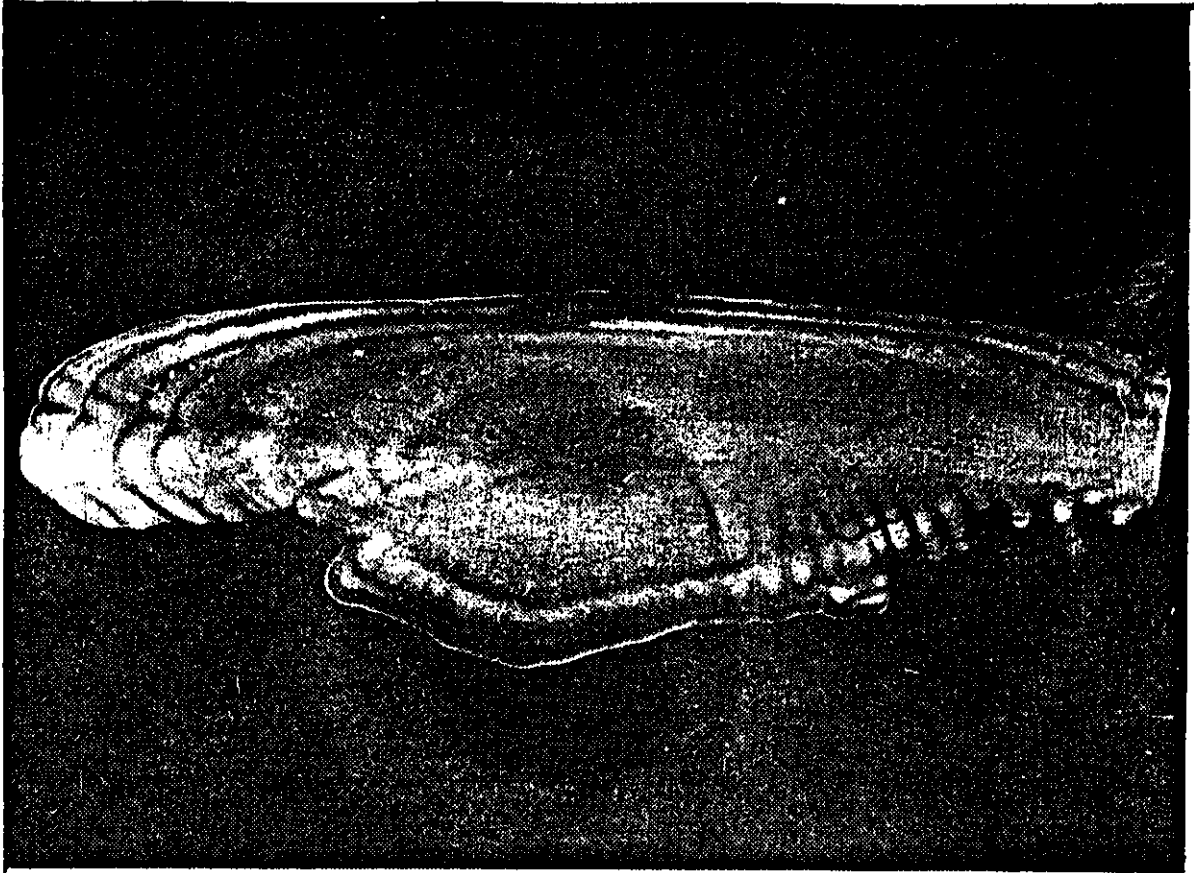


Fig. 9. Silver hake otolith. From silver hake measuring 49 cm.