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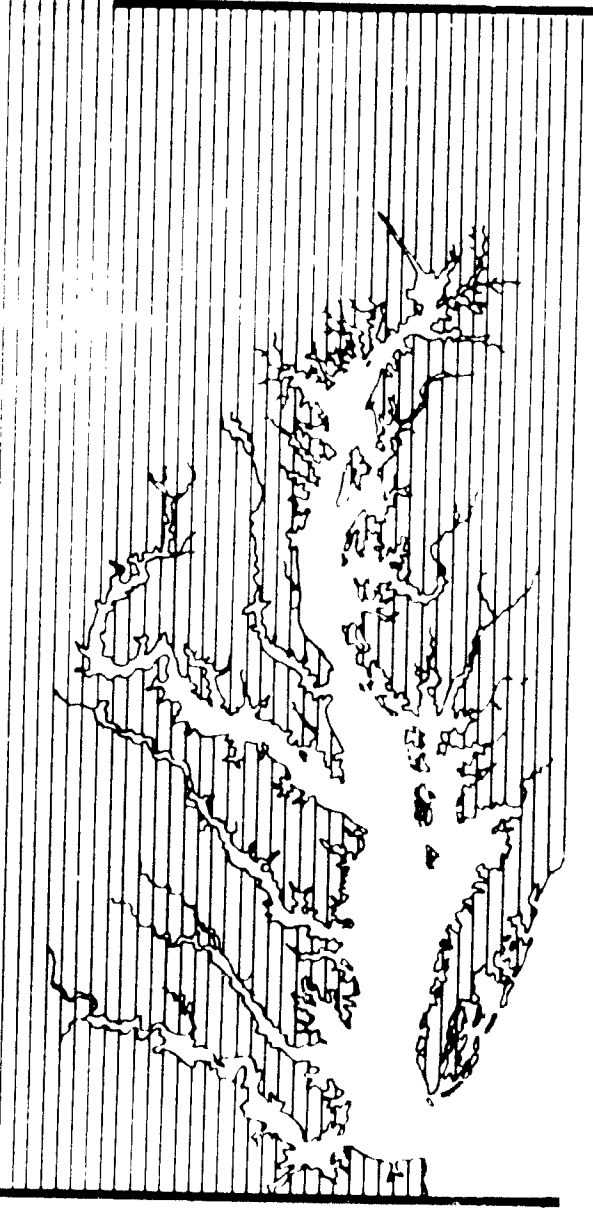

INSHORE SURVEY PROGRAM

Interim Report XIX

BOTTOM PHOTOGRAPHY CRUISE

July 21-23, 1952

Reference 53-6

May 1953

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CHESAPEAKE BAY INSTITUTE
THE JOHNS HOPKINS UNIVERSITY

Inshore Survey Program

Interim Report XIX

BOTTOM PHOTOGRAPHY CRUISE
July 21-23, 1952

Photographs By

D. M. Owen and W. T. Hammond

Photolithography By

J. Thoms

This report contains results of work carried out for the Office of Naval Research of the Navy Department under Project NR 084-005, Contract Nonr 248(07), and for the U. S. Navy Hydrographic Office.

Reference 53-6
May 1953

Wayne V. Burt
Project Supervisor

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Thirty-four bottom photographs were taken in the lower Chesapeake Bay and the adjacent shelf area on 21, 22, and 23 July 1952. Mr. David M. Owen and Mr. Willis T. Hammond from the Woods Hole Oceanographic Institution took the photographs with their gear. Half were taken from the CBI vessel MAURY and half from the USC&GS Ship PARKER under the command of Cdr. J. S. Morton.

Locations of the twenty clear photographs obtained are shown on Figure 1. Of the fourteen attempts which failed, five made in the region between Cape Henry and Thimble Shoal light produced indistinct negatives since the water was very turbid (Secchi Disc 1.7 to 2.4 meters), one taken outside the mouth of the Bay about one mile south of the position of photograph No. 9 (Figure 1) was too indistinct to print, and eight were lost when the equipment failed to function properly.

Interim Report No. 7, Reference 52-38 of the Woods Hole Oceanographic Institution, describes the techniques and equipment used to take photographs. Focal distances and bottom areas covered by the photographs are shown in Figures 2 and 3.

The number of the photograph, the Secchi disc reading, depth, description of the photograph, and information from the core taken nearest the location of the photograph, are given on the page facing the photograph.

None of the photographs show any evidence of plant life on the bottom. One fish, one worm, one star fish, a track across photograph No. 5, and

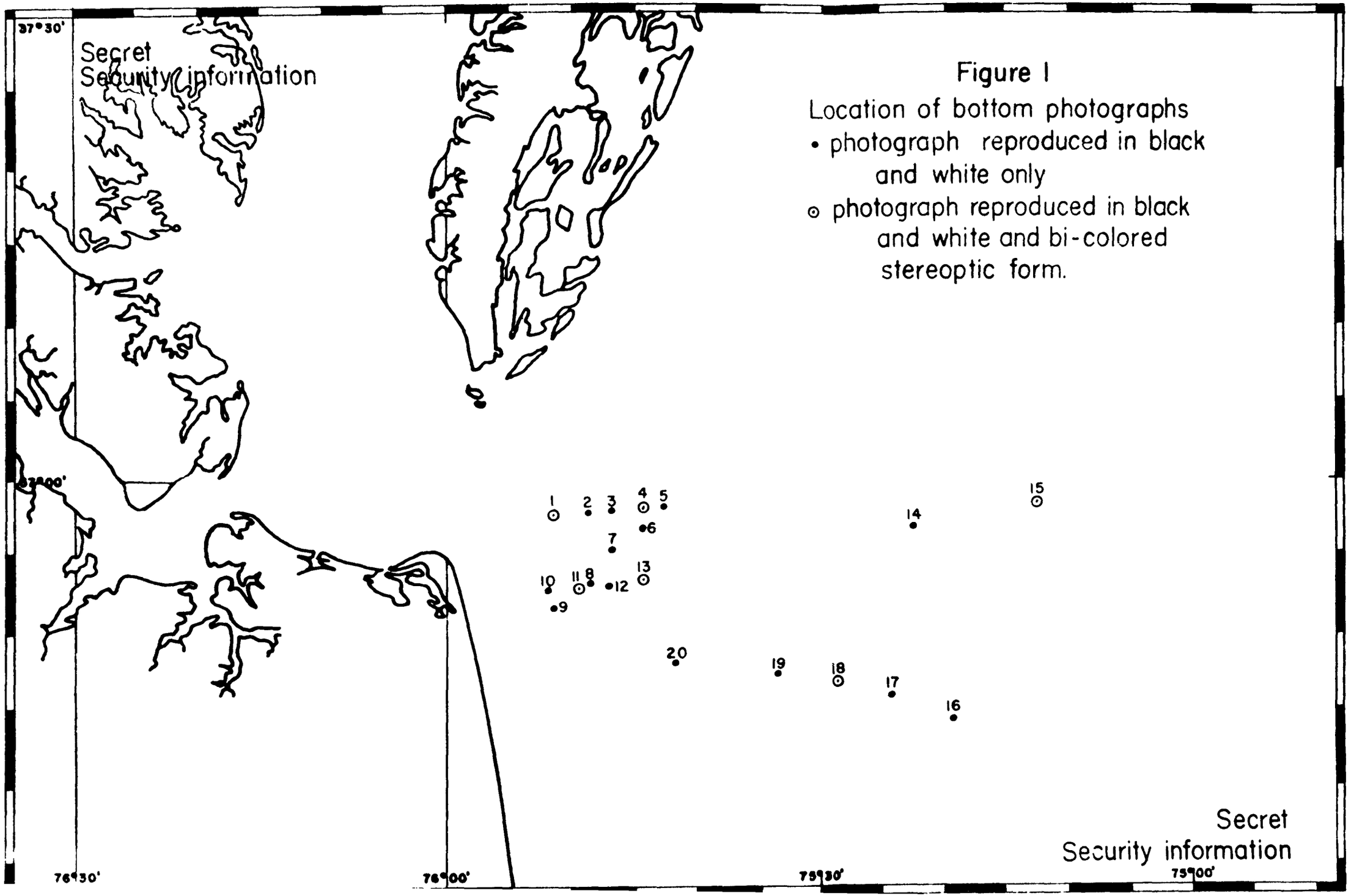

Figure 1

Location of bottom photographs

- photograph reproduced in black and white only
- ⊙ photograph reproduced in black and white and bi-colored stereoptic form.

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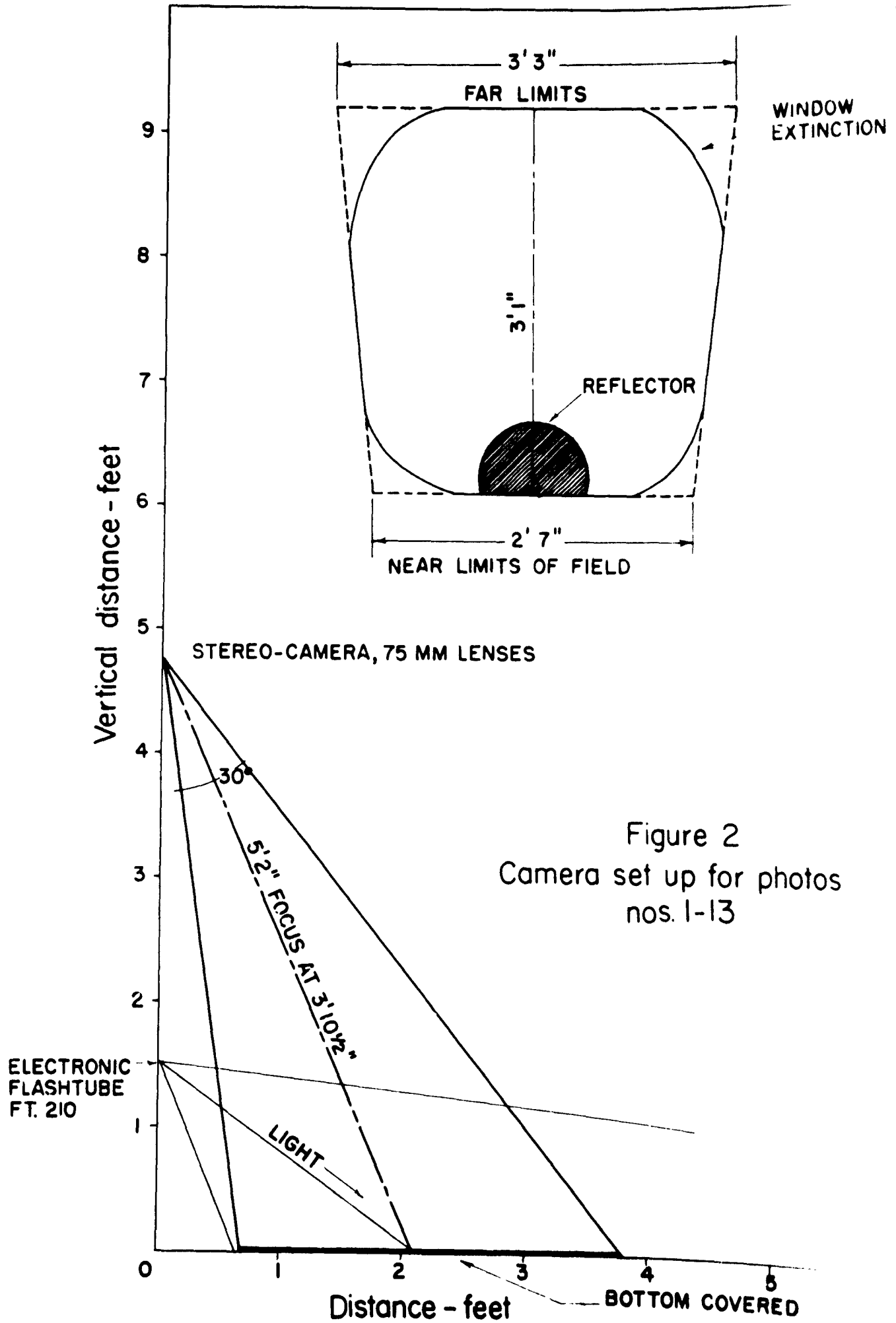

Figure 2
Camera set up for photos nos. 1-13

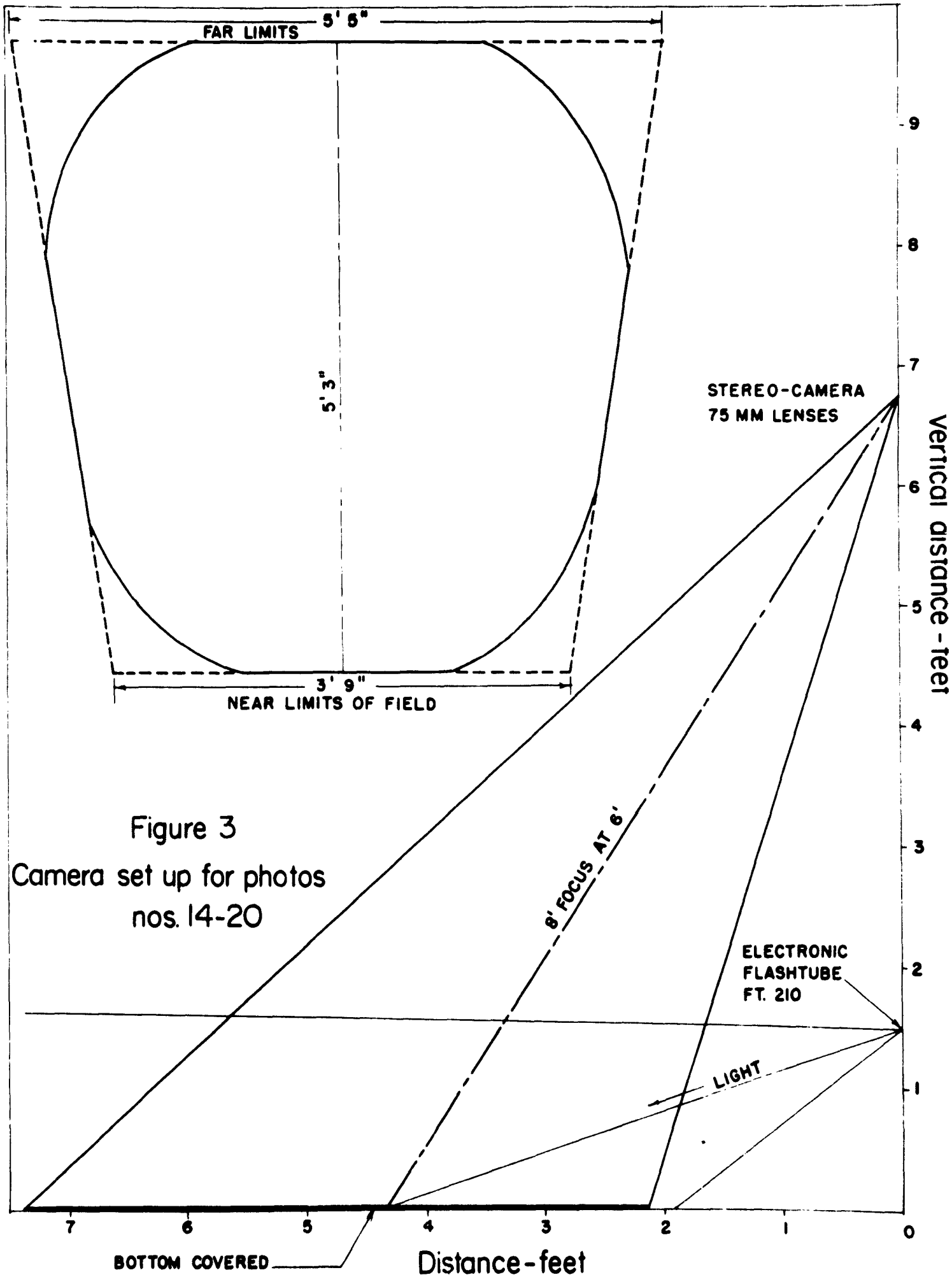

Figure 3

Camera set up for photos nos. 14-20

numerous shells and shell fragments are the only clear evidence of animal life. The bottom appears to be monotonously flat with only a few photographs showing ripple marks or slight undulations of the bottom. The inorganic bottom material appeared to be of sand size or smaller.

Six of the photographs are reproduced in stereoptic form. The number of each corresponds to the number of the same photograph with its descriptive material which is to be found in the front of the report. The stereoptic photographs were included to show the small scale of the relief of the bottom.

Thanks are due to Cdr. Morton and Messrs. Owen and Hammond for their cooperation in obtaining the photographs.

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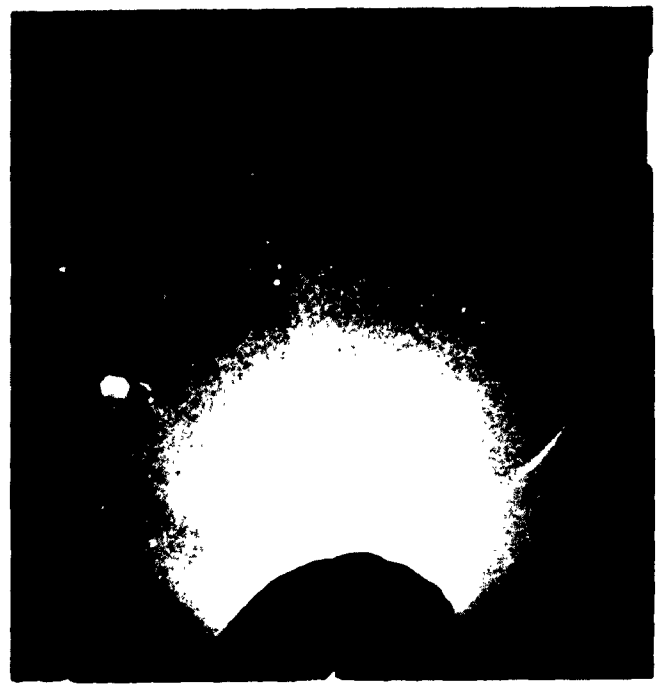
No. 1

Secchi Disc 6.1 meters. Depth 38 feet.

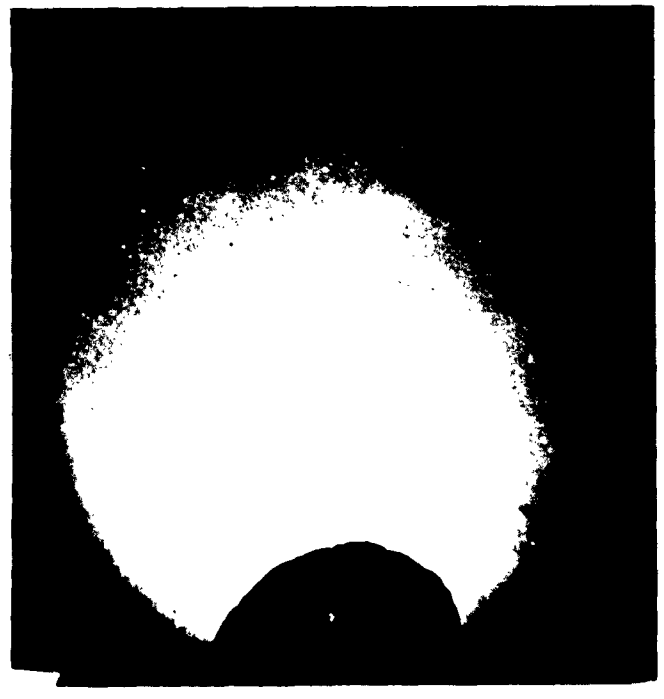
The bottom photograph shows a smooth, sandy bottom with a few small shells and shell fragments. The large white spot on the left hand side of the photograph is a flaw in the negative. Note the worm on the lower right hand side. A core from this locality shows that the sediment is a medium-gray, sub-angular, well sorted, very fine grained sand. Water content of the sediment is 14.86 per cent.



No. 2

Secchi Disc 6.1 meters. Depth 40 feet.

The bottom photographs shows a smooth sandy bottom. There is a flaw in the lower right hand portion of the photograph. A core from this locality shows that the sediment is a medium gray to light olive gray, sub-rounded, well sorted, medium to very fine grained sand. The sediment contains about 30 per cent shells by volume.



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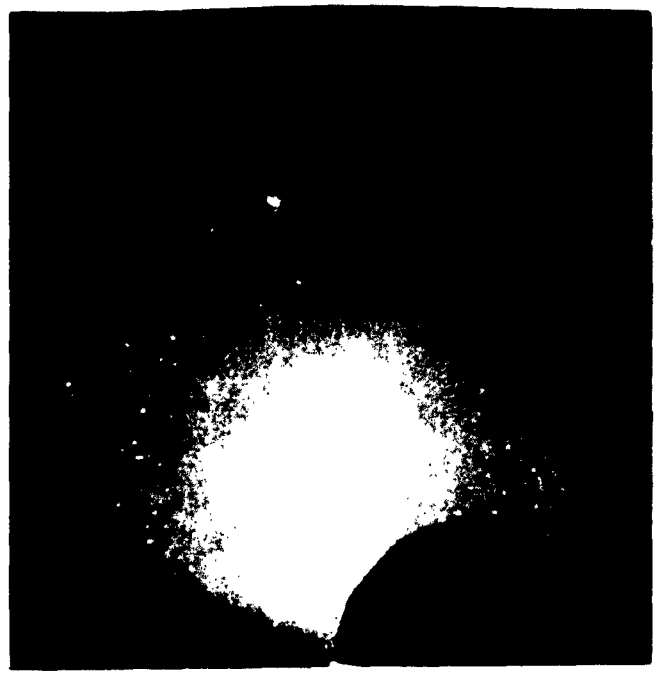
No. 3

Secchi Disc 7.6 meters. Depth 40 feet.

The bottom photograph shows a sandy bottom with slight undulations. Note starfish on left hand edge of photograph. A core from this locality shows that the sediment is medium gray, sub-angular, well worted, medium grained sand. Water content of the sediment is 26.89 per cent.



No. 4

Secchi Disc 7.3 meters. Depth 52 feet.

The bottom photograph shows a rippled bottom with the wave length of the ripple marks 7 to 8 inches. A core from this locality shows that the sediment is a light olive brown, sub-angular to well rounded, well sorted, medium grained sand.

No. 5

Secchi Disc 9.8 meters. Depth 60 feet.

The bottom photograph shows an undulating sandy bottom with an animal track across the upper center of the photograph. A core from this locality shows that the sediment is a light gray, sub-angular to well rounded, well sorted, fine grained sand. Water content of the sediment is 28.56 per cent.

No. 6

Secchi Disc 11.3 meters. Depth 53 feet.

The bottom photograph shows an undulating sandy bottom with faint signs of ripple marks and a few shell fragments. The core from this locality shows that the sediment is a light olive brown, rounded, well sorted, medium grained sand.

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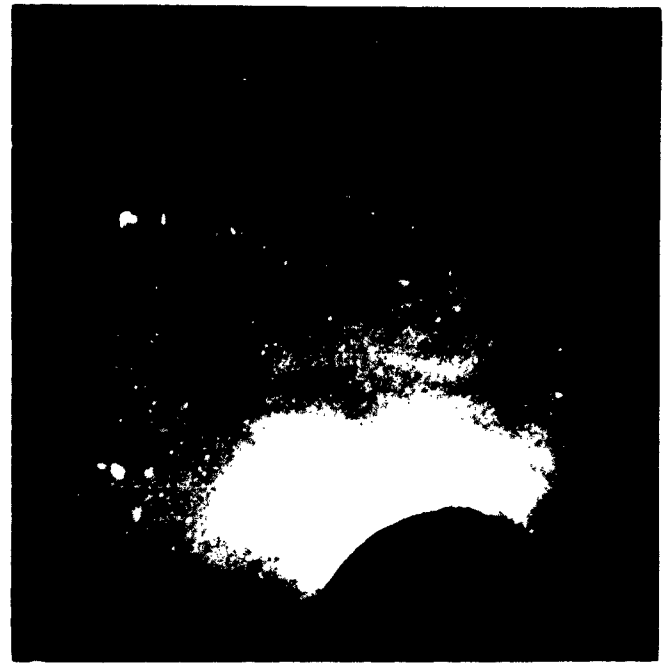
No. 7

Secchi Disc 10.1 meters. Depth 48 feet.

The bottom photograph shows an undulating sandy bottom with shells and shell fragments. A core from this locality shows that the sediment is a medium gray, sub-angular, well sorted, very fine grained sand.



No. 8

Secchi Disc 9.5 meters. Depth 44 feet.

The bottom photograph shows an undulating sandy bottom with a few shell fragments. A core from this locality shows that the sediment is a light olive gray, sub-angular, sorted, very fine grained sand. Water content of the sediment is 37.12 per cent.

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No. 9

Secchi Disc 8.5 meters. Depth 52 feet.

The bottom photograph shows a nearly smooth sandy bottom with a few shell fragments. A core from this locality shows that the sediment is a dark gray, angular, sorted, very fine grained sand. Water content of the sediment is 29.07 per cent.

No. 10

Secchi Disc 5.5 meters. Depth 47 feet.

The bottom photograph shows a nearly smooth sandy bottom with a few shell fragments. There are faint signs of ripple marks and undulations. A core from this locality shows that the sediment is a dark gray, sub-angular, poorly sorted, fine to medium grained, silty sand. Water content of the sediment is 49.40 per cent.

No. 11

Secchi Disc 5.5 meters. Depth 50 feet.

The bottom photograph shows a sandy bottom with a few shell fragments and well developed ripple marks with 4 to 5 inch wave length. A core from this locality shows that the sediment is a dark gray, sub-angular, poorly sorted, very fine grained, silty sand.

No. 12

Secchi Disc 12 meters. Depth 57 feet.

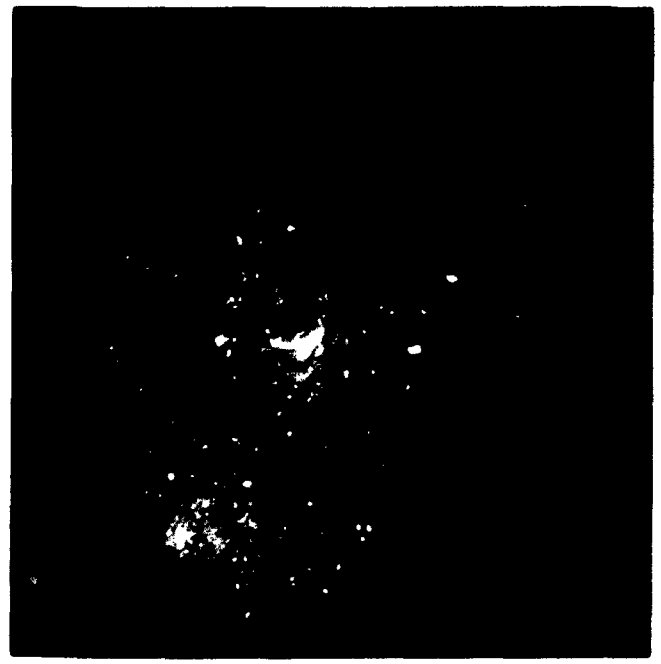
The bottom photograph shows a sandy bottom with a few shell fragments and well developed ripple marks with 4 to 5 inch wave length. A core from this locality shows that the sediment is a gray, angular to sub-rounded, sorted, fine grained, silty sand.

No. 13

Secchi Disc 12 meters. Depth 57 feet.

The bottom photograph shows a smooth sandy bottom with many shells and shell fragments. Note the fish in the center of the photograph. A core from this locality shows that the sediment is a light gray to medium gray, angular to rounded, sorted, fine to very fine grained sand.

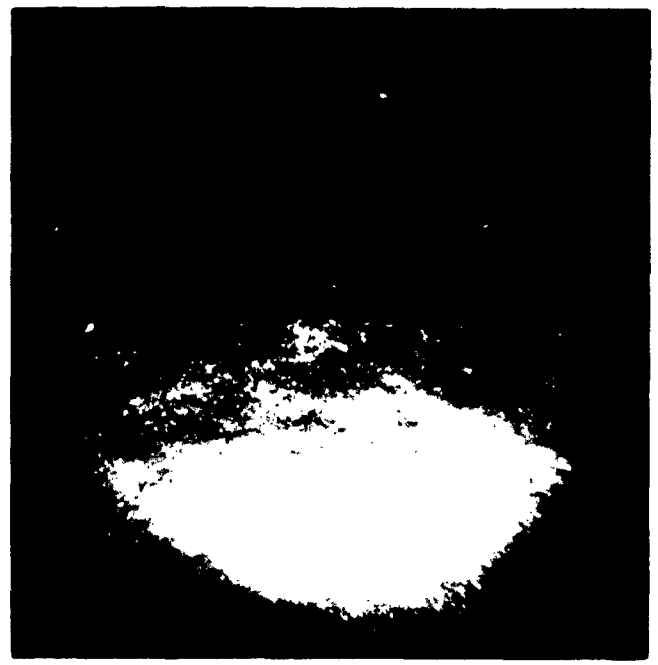
SEE TEXT FOR SCALE CHANGE BEGINNING WITH THIS PHOTOGRAPH.



No. 14

Secchi Disc well over 12 meters. Depth 100 feet.

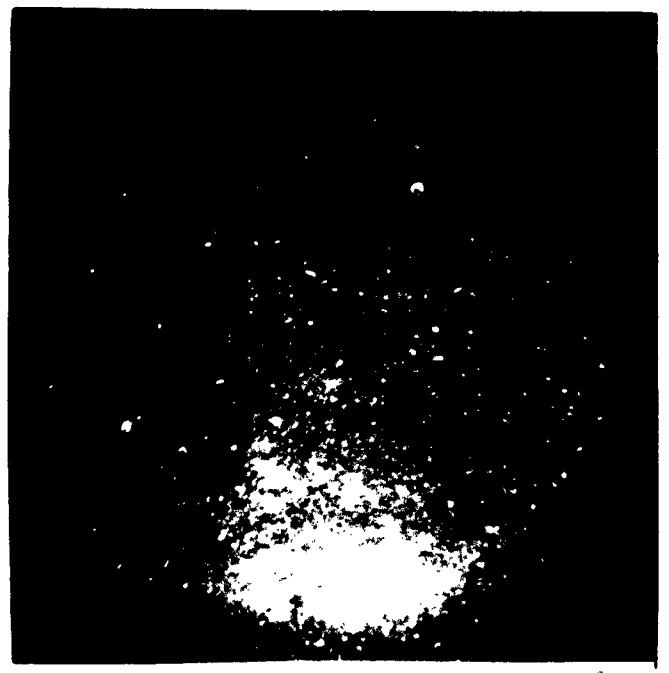
The bottom photograph shows an undulating sandy bottom with faint signs of ripple marks with 6 to 7 inch wave length and some shell fragments. A core from this locality shows that the sediment is a brown, angular to rounded, sorted, medium grained sand.



No. 15

Secchi Disc well over 12 meters. Depth 126.5 feet.

The bottom photograph shows a slightly undulating sandy bottom with shells. A core from this locality shows that the sediment is a gray, angular to rounded, poorly sorted, fine to coarse grained sand.



No. 16

Secchi Disc well over 12 meters. Depth 74.5 feet.

Camera recorded one-half frame only. The bottom photograph shows large shells and faint ripple marks and an undulating bottom. A core from this locality shows that the sediment is a yellowish brown, angular to sub-rounded, fairly well sorted, medium grained sand.

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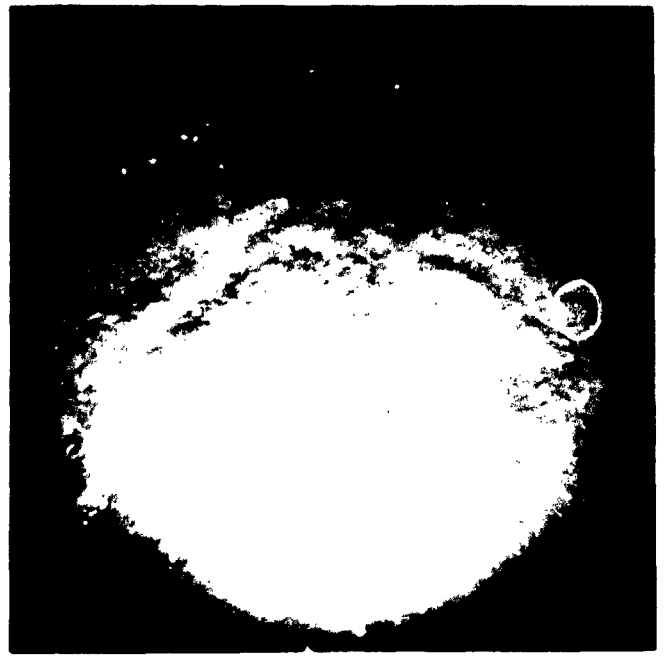
No. 17

Secchi Disc well over 12 meters. Depth 80 feet.

The bottom photograph shows an undulating sandy bottom with many shell fragments and faint suggestions of ripple marks. A white spot in the lower left hand corner of the photograph is a film abrasion. A core from this locality shows that the sediment is a pale yellowish brown, angular to rounded, poorly sorted, coarse to fine grained, silty sand.



No. 18

Secchi Disc well over 12 meters. Depth 63 feet.

The bottom photograph shows an undulating sandy bottom with many shell fragments and faint suggestions of ripple marks. A core from this locality shows that the sediment is a brown, angular to rounded, fairly well sorted, coarse grained, gravelly sand.

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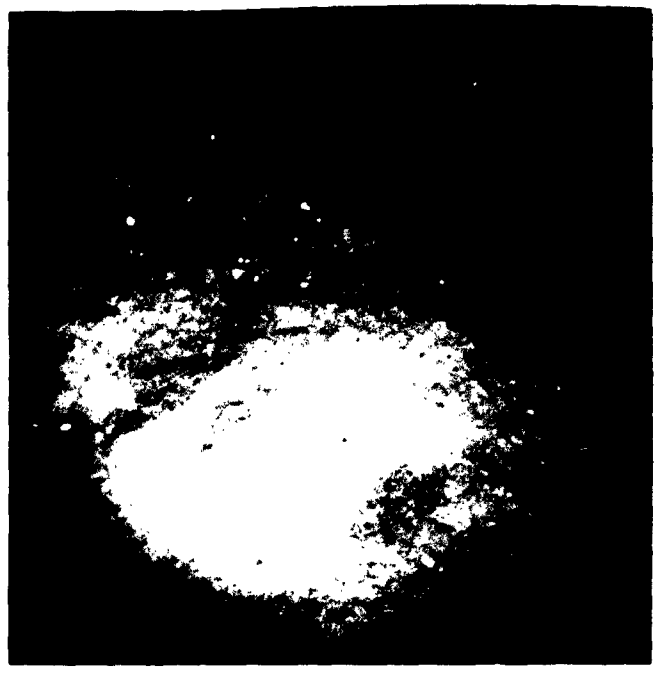
No. 19

Secchi Disc well over 12 meters. Depth 74 feet.

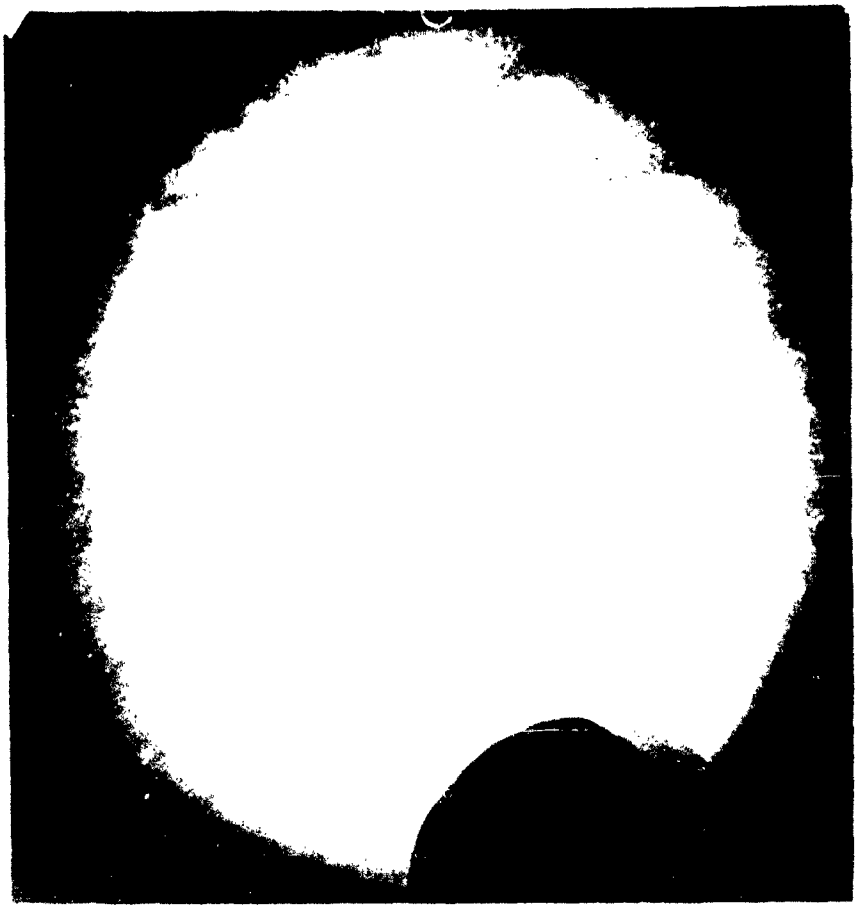
The bottom photograph shows an undulating sandy bottom with many shell fragments and ripple marks. A core from this locality shows that the sediment is a dark gray, angular to sub-angular, poorly sorted, medium grained sand.

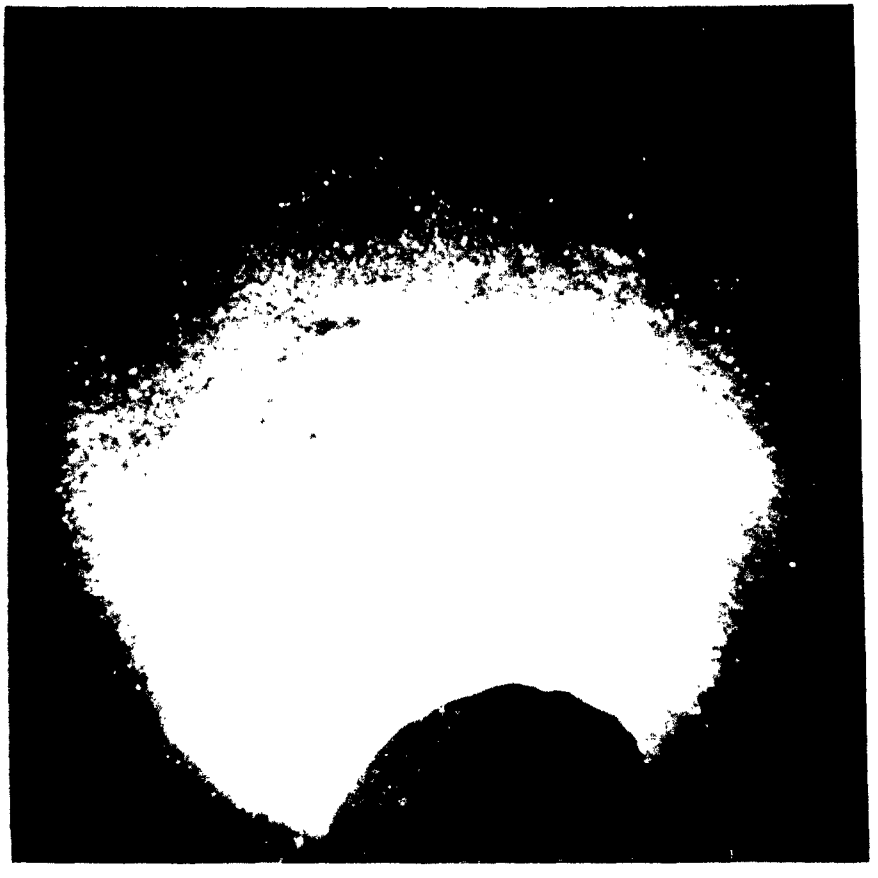


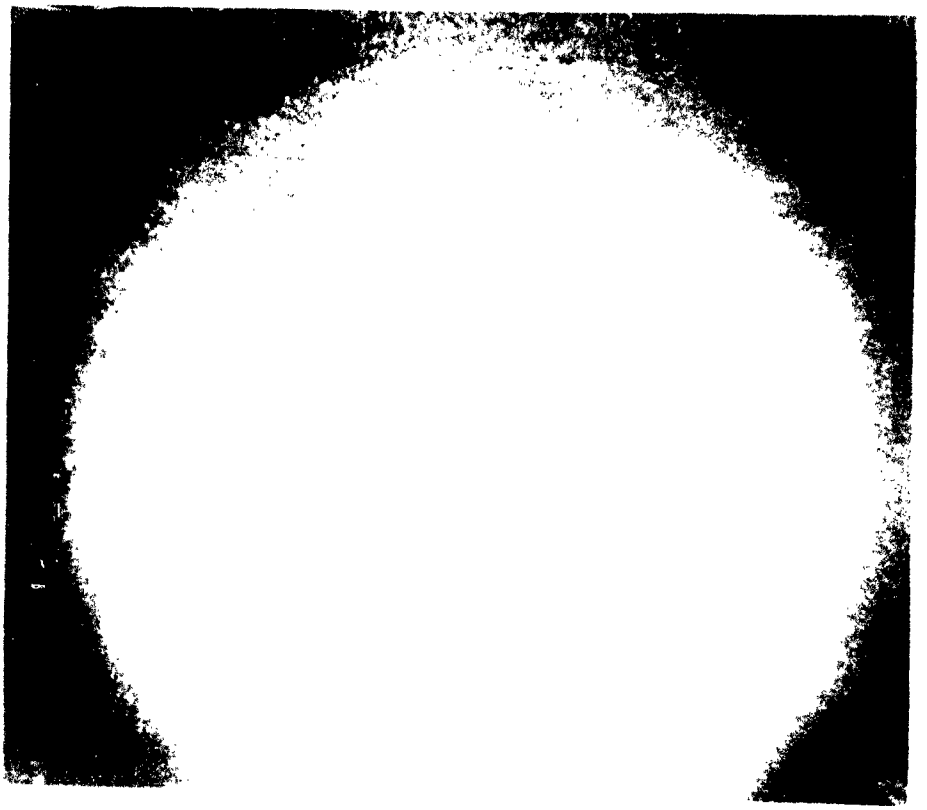
No. 20

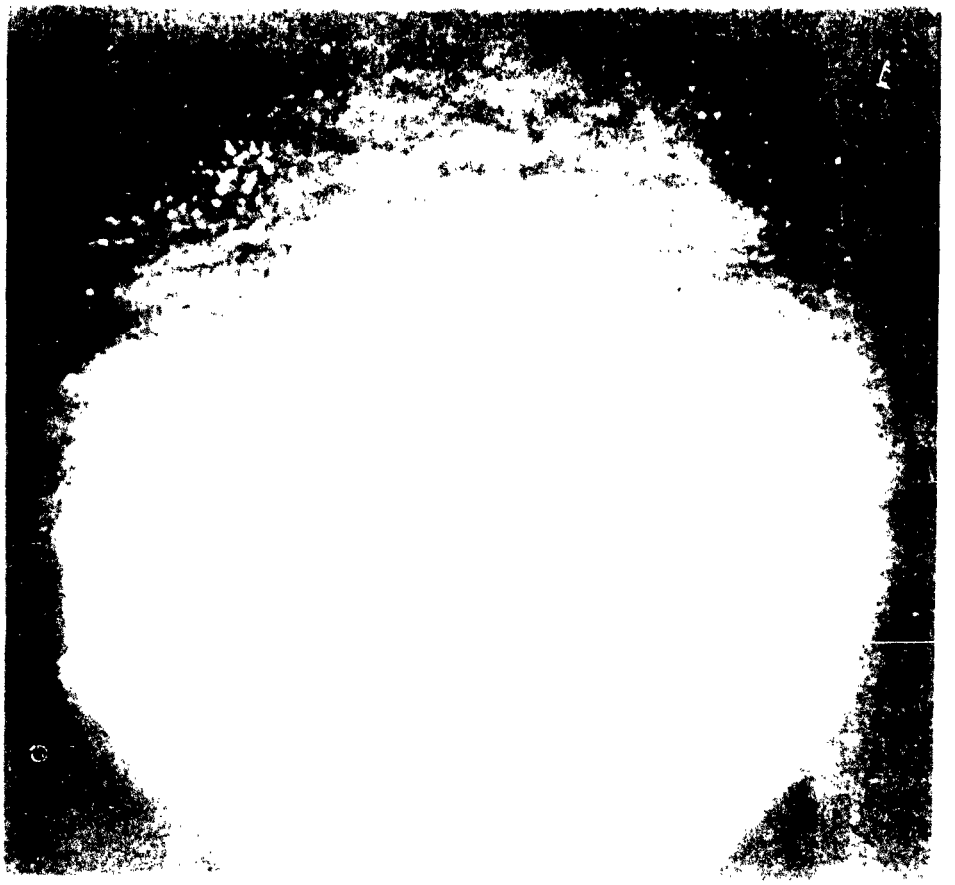
Secchi Disc 12 meters. Depth 63 feet.

The bottom photograph shows a dimpled bottom. A core from this locality shows that the sediment is a grayish brown, angular to rounded, poorly sorted, coarse to fine grained sand.









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