



Figure 21.—Canyon-wall sand. Small dunes on lower part of north wall; contiguous with sand deposits in canyon axis; relief on dune about 30 cm. Dive 11; Alvin 1034 (RTN15), looking upslope, 254 m.

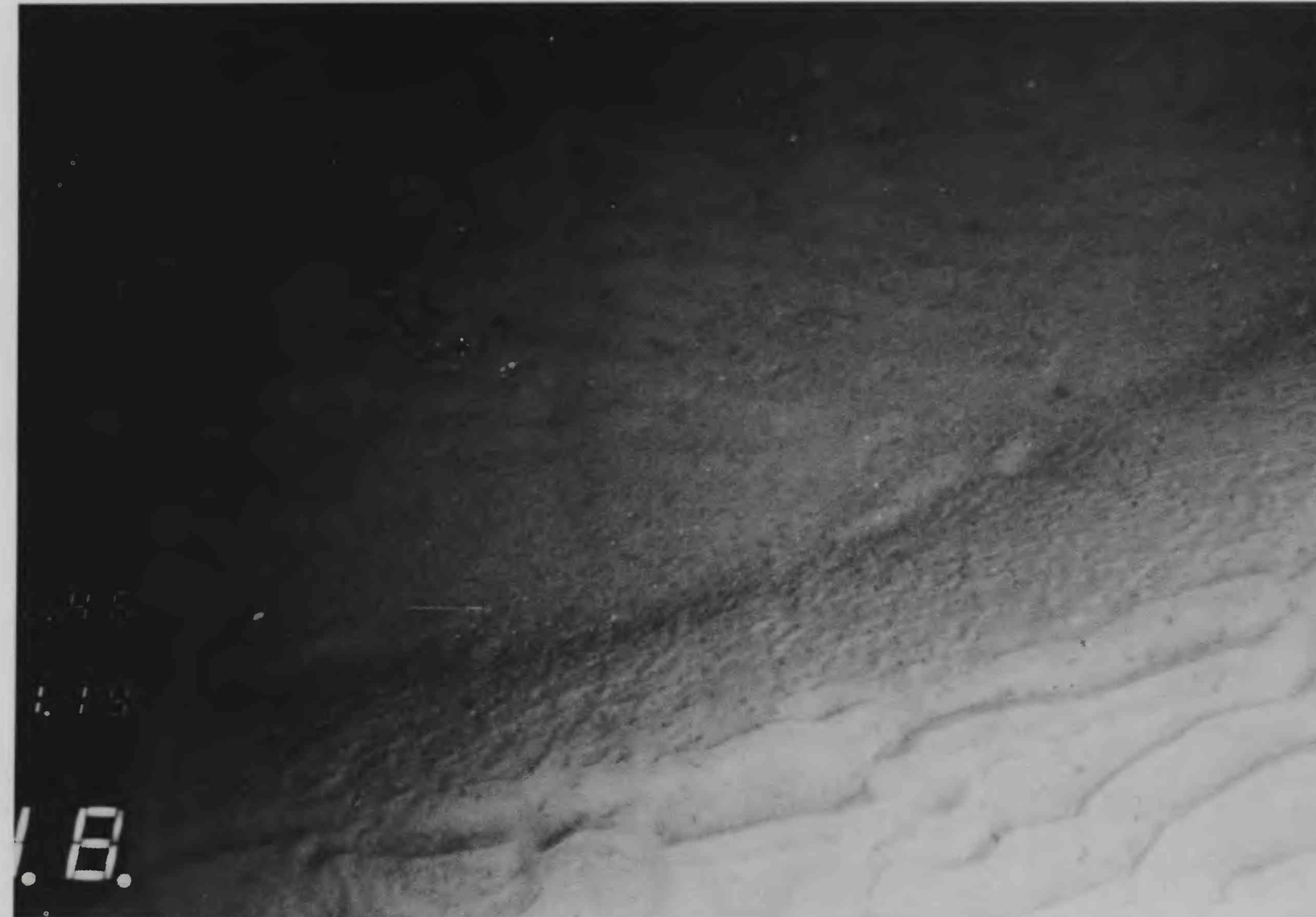


Figure 22.—Canyon-wall sand. Crest of dune on west wall; ripples on gentle slope of dune have wavelengths of 15 to 20 cm and are parallel to crest; faintly visible ripples in front of dune are oriented perpendicular to crest; steep slope of dune faces obliquely downslope. Dive 4; JSL 1066 (164531), looking downcanyon along slope, 398 m.



Figure 23.—Canyon-wall sand. Dune on west wall; gentle upcanyon face of dune is rippled, wavelengths from 10 to 15 cm; steep face is oriented obliquely downslope; semiconsolidated sandy silt exposed in front of dune is burrowed and fragments of clayey silt are visible; red hake in burrowed area. Dive 5; Alvin 1036 (172405), looking upslope, 346 m.



Figure 24.—Semiconsolidated sandy silt. Sea floor almost featureless; Jonah crab with carapace about 15 cm wide excavating burrow on west wall; angular fragments of silt fallings deposited on downslope lip of burrow. Dive 5; Alvin 1036 (170432), looking upslope, 397 m.



Figure 25.—Semiconsolidated sandy silt. Angular fragments ranging up to 10 cm wide and unconsolidated silt are products of bioerosion on lower part of west wall; burrow at left; fine sediment is moving to left (downcanyon) along wall. Dive 5; Alvin 1036 (151133), looking upslope, 383 m.



Figure 26.—Semiconsolidated sandy silt. Veneer of rippled, unconsolidated silt and angular fragments of silt, products of bioerosion, are being transported along west wall; ripples are oriented subparallel to slope of wall and wavelengths vary from 10 to 15 cm. Dive 5; Alvin 1036 (153231), looking upslope, north northwest, 537 m.



Figure 27.—Semiconsolidated sandy silt. Burrowed horizon on west wall; Jonah crab burrows aligned along wall is initial stage of bioerosion that results in formation of subvertical outcrops of sandy silt substratum; Jonah crab in burrow is 10 cm wide. Dive 4; JSL 1066 (164413), looking downcanyon along wall, 380 m.



Figure 28.—Semiconsolidated sandy silt. Extensive burrowing of west wall by Jonah crabs; elongated burrow in center is about 20 cm wide; unconsolidated silt and angular fragments of silt are products of bioerosion. Dive 5; Alvin 1036 (170312), looking upslope, 402 m.



Figure 29.—Semiconsolidated sandy silt. Burrowing and collapse of blocks have formed vertical outcrop on west wall; squarish block in center is about 40 cm wide; unconsolidated clay and silt is at base of exposure. Dive 5; Alvin 1036 (154814), looking upslope, 528 m.

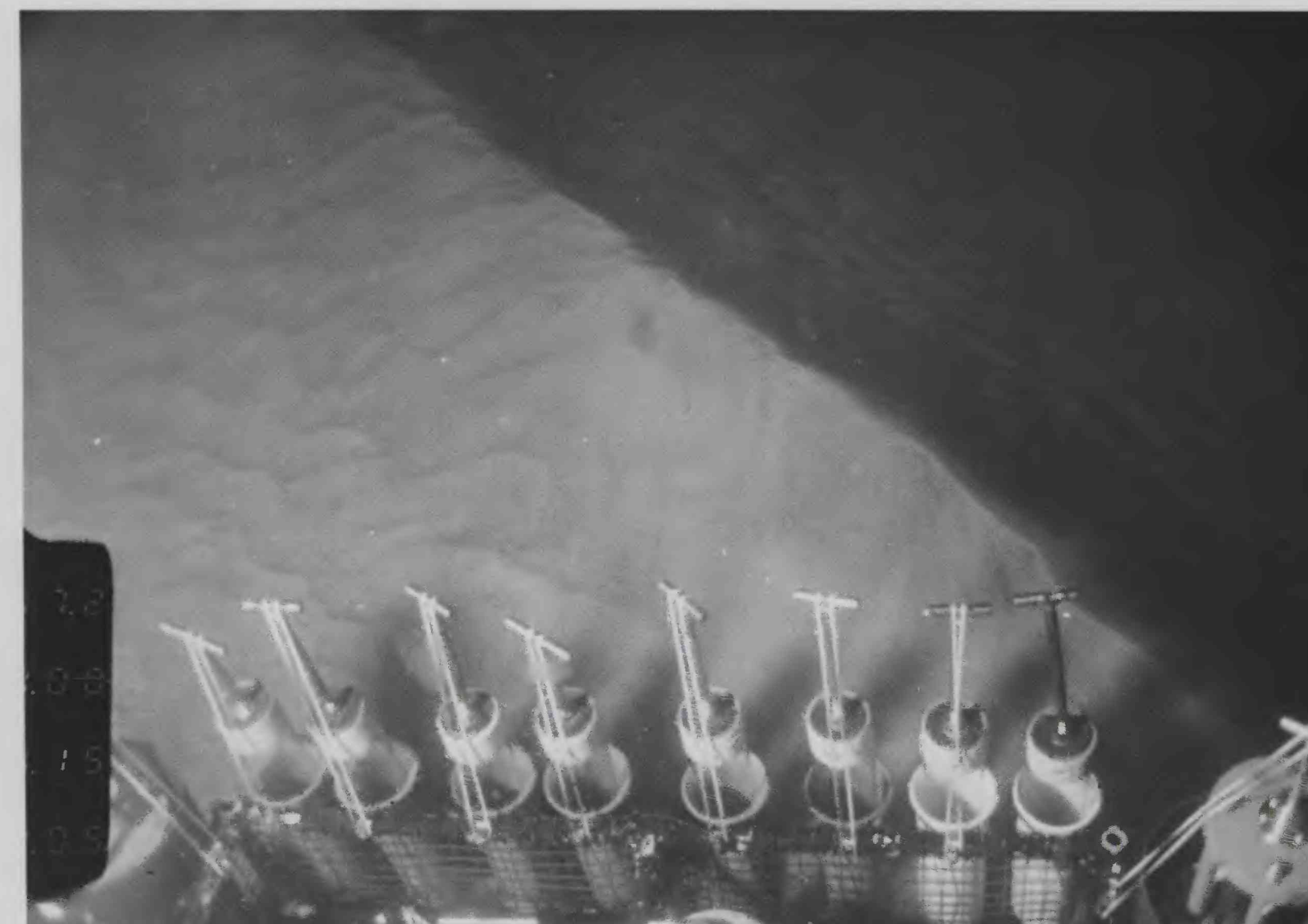


Figure 30.—Canyon-floor sand. Rippled sand dune; sharp, straight crest oriented across canyon axis; steep side faces upcanyon to right, and trough is 2-3 m deep. Dive 11; Alvin 1034 (154005), looking west, 377 m.

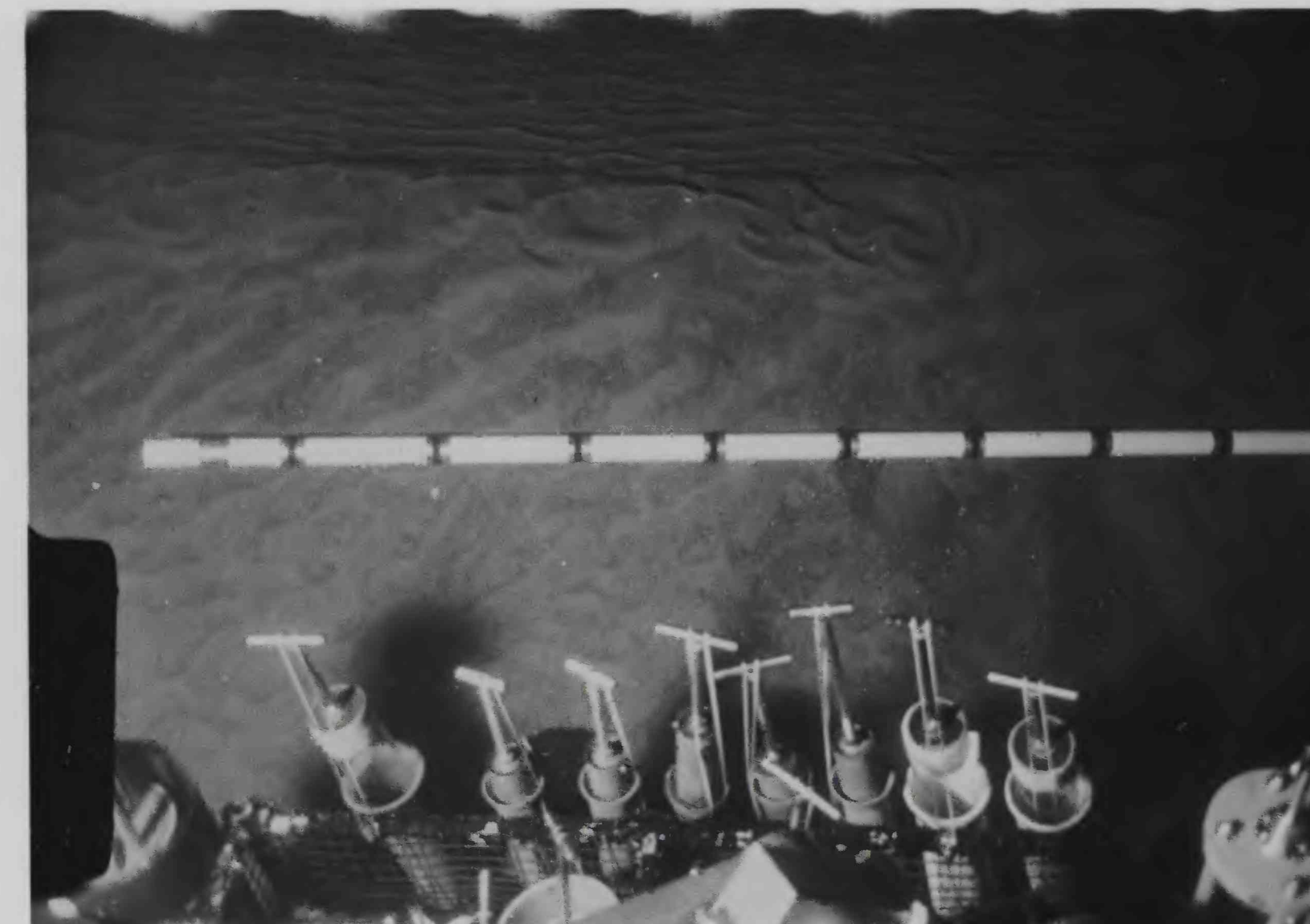


Figure 31.—Canyon-floor sand. Steep downcanyon face of sand dune oriented across canyon axis; ripples are oblique to crest on steep face and parallel to crest on gentle upcanyon face; black bands on red spaced at 30.5 cm (1 ft) intervals. Dive 5; Alvin 1036 (140717), looking upcanyon 621 m.



Figure 32.—Canyon-floor sand. Steep and sinuous upcanyon face of dune on canyon floor; ripples with wavelengths of about 15 cm are aligned parallel to slope of steep face and transverse to trend of trough; ripples on top of dune are parallel to the crest; darker sediment in trough is fine organic material; Nezumia, the grenadier fish, in trough. Dive 11; Alvin 1034 (R4N32), looking northeast across axis, 345 m.



Figure 33.—Canyon-floor sand. Rippled sand at base of gentle downcanyon slope of dune; granules, small pebbles, and shell fragments concentrated in ripple troughs; ripple wavelengths are about 20 cm; starfish and Jonah crab. Dive 11; Alvin 1034 (R2N34), looking north across axis, 380 m.



Figure 34.—Canyon-floor sand. Dune oriented across canyon axis; ripples on steep upcanyon face to left are transverse to dune crest; ripples on gentle slope have wavelengths of 20 to 25 cm and are oblique to crest; organic debris is concentrated on steep face. Dive 21; JSL 1064 (133239), looking northeast across axis, 288 m.



Figure 35.—Canyon-floor sand. Crest of dune is oriented across canyon axis; steep slope faces upcanyon to left and is bounded by trough 2 m deep; ripples on gentle slope are perpendicular to crest and have wavelengths of about 10 cm; sand transported up steep slope is ascending over downcanyon lip of dune crest. Dive 11; Alvin 1034 (R2N20), looking northeast across axis, 383 m.

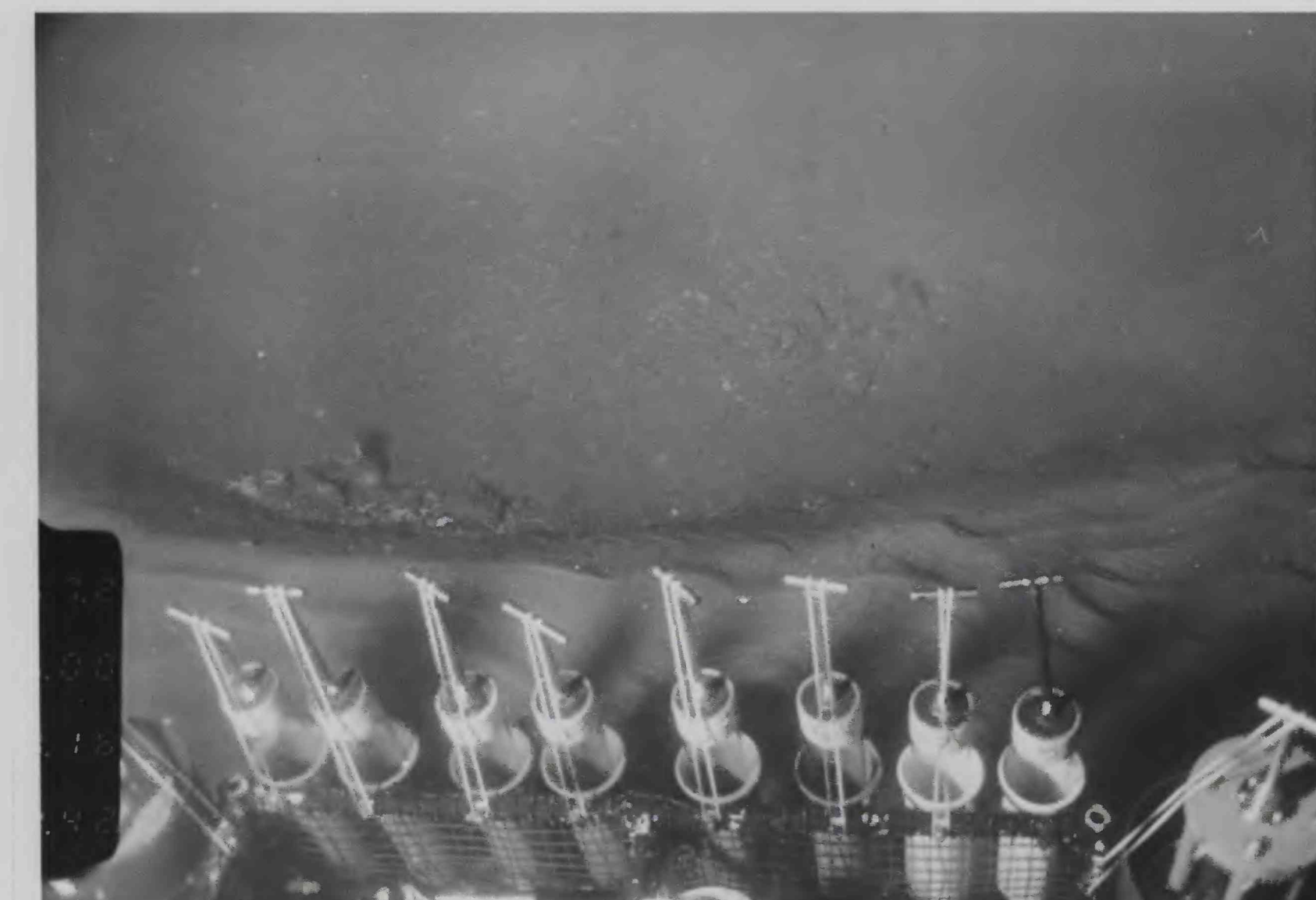


Figure 36.—Canyon-floor sand. Curved crest of rippled dune is oriented across canyon axis; wavelengths of ripples on crest are 15 to 20 cm; steep slope faces upcanyon; concentration of gravel with anemones in trough; rippled gentle slope of another dune faintly visible in background. Dive 11; Alvin 1034 (162142), looking upcanyon, 365 m.

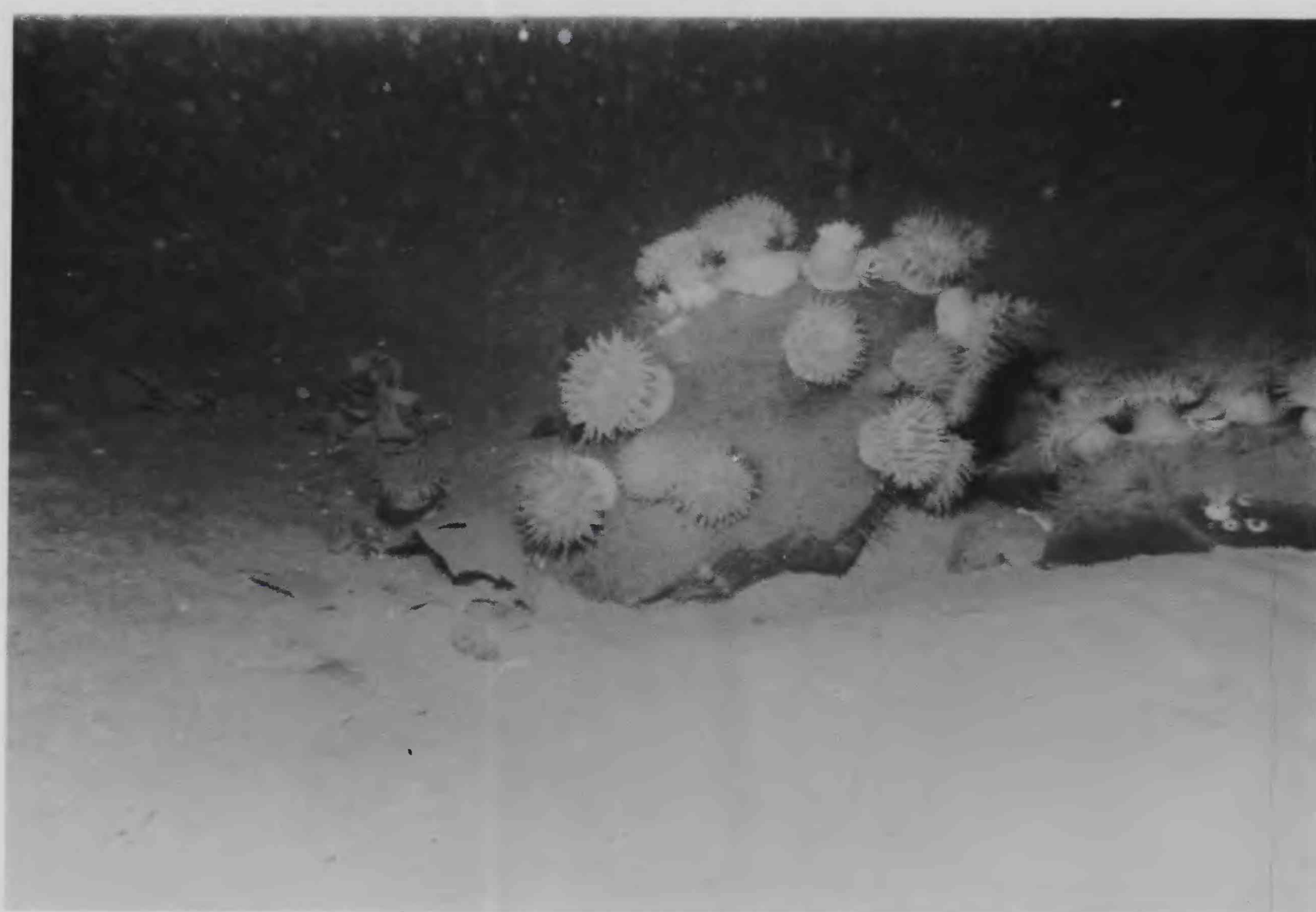


Figure 37.—Canyon-floor sand. Large, partly buried boulders in trough among dunes on canyon floor; steep slope of dune faces upcanyon to left in background, and ripples aligned transverse to dune crest are faintly visible; Actinoga anemones and small Jonah crabs colonizing boulders; Actinoga in center of boulder is about 15 cm in diameter. Dive 11; Alvin 1034 (R5N3), looking northeast across axis, 325 m.



Figure 38.—Canyon-floor sand. Erratic is almost buried in rippled sand on gentle downcanyon slope of dune; exposed rock is 45 cm wide and is bare of encrusting organisms; scour pattern indicates sediment is moving upcanyon. Dive 11; Alvin 1034 (162208), looking upcanyon, 365 m.

SUBMARINE TOPOGRAPHY, SURFICIAL GEOLOGY, AND FAUNA OF OCEANOGRAPHER CANYON, NORTHERN PART

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