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AN UNUSUAL DISTORTED SPONDYLUS FROM THE MOIN
FORMATION (PLEISTOCENE), COSTA RICA

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A single left valve of a much distorted specimen of *Spondylus bostrychites* Guppy (1867, p. 176) was collected from Tulane locality 953 at Moin Hill, the type locality of the Moin Formation (Gabb, 1895, p. 80) considered to be of early Pleistocene age (Akers, 1972, pp. 42-44, fig. 3).

The valve under consideration appears to have attained essentially a normal adult size and ornamentation, with a height of 115 mm, a width of 107.3 mm, and a diameter of 36.5 mm. Then the anterior margin began to trend inwards with coarsely rugose, non-ornamented growth increments accumulating diagonally to margin an increasingly smaller valve opening. Prior to the onset of distortion the inner margin had a width of about 100 mm; this was reduced to 66 mm. The marginal dis-

tortion appears essentially to have been confined to the anterior side and to have tended to tilt the left valve relative to its original normal position. This is evidenced by the fact that the rugose increments progressively overlap posteriorly around the valve margin such that the area of distorted growth gradually passes from a width of about 32 mm on the anterior side to being essentially absent just below the posterior end of the hinge area.

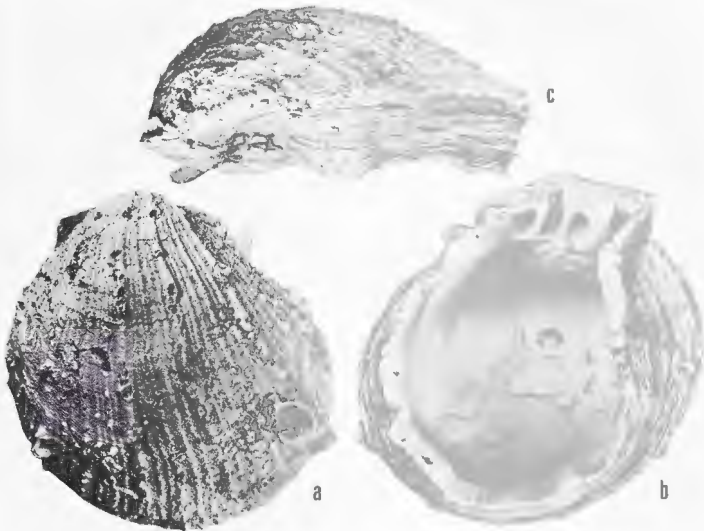
That this same distortion affected the hinge area is evidenced by the greater width of its anterior portion and by the fact that the resilial pit tends to develop a slight posteriorly trending curve in its later stages.

The right valve was not found and its condition is unknown. It seems probable,

however, that it must have developed a similar distortion as the inter-valve marginal area became progressively narrower. The reason for this distorted growth is not evident; the outer surface of the valve shows no evidence of any damage. It may be that the right valve was the one damaged; the fact that the anterior margin of the distorted segment is relatively straight, rather than rounded, and that the entire margin is irregularly undulating, not smooth, is indicative of extreme distortion in that valve also.

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Text figure 1, *Spondylus bostrychites* Guppy; height 115.0 mm, width 107.3 mm, diameter 48.0 mm; locality TU 953, Moin, Costa Rica ($X \frac{1}{2}$).