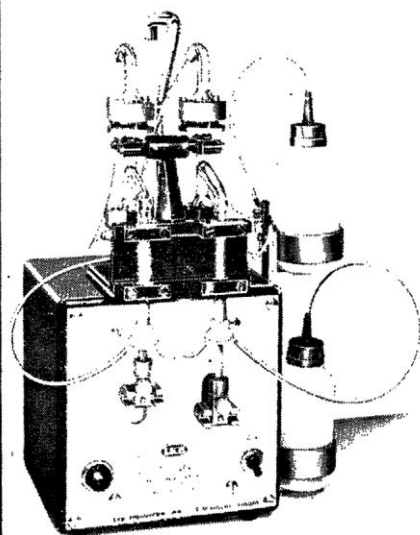


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the subtitle which *Science* added to my article entitled "The scientific establishment" [136, 1099 (1962)] was not written by me, and indeed was one which I had expressly objected to using.

That subtitle, as published, read thus: "The American system gives scientists in government a freedom and influence unmatched in other countries." The statement is vague enough to be defensible, but I do not really believe it is true, and my article made no such sweeping gesture to our national self-esteem. I would not argue with a British scientist that he is less free than his American colleague, and I am not sure that certain Russian scientists have less influence than their counterparts here.

The subtitle which I proposed (and which I am sure was left out by mistake) was this: "Scientists in policy roles help create a constitutional system unlike parliamentary or Marxist models." I was trying to say that scientists in the United States had had an important role in creating a different system, not that the system was better. I happen to like it, but it is a good idea, I think, to analyze objectively a system that we are talking about even if we then wish to judge it according to our prejudices. I have been pleased to note that some of the things in my article which American readers thought were meant to give high praise to the system have been taken by certain British friends as a shameful confession of the political delinquency of the United States.

DON K. PRICE

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We plead guilty to the oversight of not substituting the subtitle suggested by Dr. Price after his article had gone to the printer. Our proofreaders should have caught the mistake in the galley proofs.—Ed.

Sand Dune Alignment

G. F. Jordan in his excellent paper on "Large submarine sand waves" [*Science* 136, 839 (1962)] has quoted me [*ibid.* 132, 1369 (1960)] as implying that linear sand dunes from the Arabian Peninsula are oriented parallel to the prevailing winds.

Without detracting from the excellence of his paper, I wish to state, for

the record, that as far as the Arabian Desert is concerned, under no circumstances can linear dunes be aligned parallel to the prevailing winds. The situation is much more complex than this. Linear dunes are generally formed parallel to a line that may be the resultant of forces exerted by winds from a minimum of three directions, only one of which, usually a mild or moderate wind, is apt to be parallel to the axes of the dunes.

In the Rub' al Khali, linear dunes originate as fields of transverse crescentic dunes, which, in the course of a long time, evolve into elongated, linear groups, which may in turn become partly or entirely linear in shape. Relief is built up by seasonal storm winds from opposite to adjacent quarters and the lineation is accentuated by moderate winds parallel to the axis, usually from one direction.

The curved linear sand waves shown in Jordan's Fig. 7, bear some similarity to desert dune patterns but appear to be oriented 180° out of phase. For desert dunes, the arcs are always *upwind* and the concavities are *downwind*.

The analogy of sand dunes to waves is unfortunate. Dunes, contrary to commonly held notions, are immobile, thus can hardly be considered as wave forms. Sand migrates; dunes do not. The distinction is made obscurely by R. A. Bagnold in his book, *The Physics of Blown Sand and Desert Dunes*.

DONALD A. HOLM

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My statement about extensive linear dunes and their alignment parallel to "prevailing winds" should have been attributed to Kadar, whom I cited, and to others, including Bagnold, cited by him, who described Libyan dunes, not to Holm, who described the Arabian dunes. The latter dunes appear to be parallel to "reversing winds," as indicated in Holm's paper by his description of the wind regime in Rub' al Khali and by lineations in his Fig. 1.

As for the curvature of crestlines on Cultivator Shoal in my Fig. 7 in relation to cross-sectional asymmetry (Profile 2), it does appear that conditions are contrary to those in the encircled area to the west (Profile 7) and in dune patterns described by Holm and others. Further field investigations of the environment here are certainly needed.

G. F. JORDAN

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