

Letters

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specific activity is blood-group activity. I hope that this will make clear that the use of this technique does not assume that blood-group activity should be associated with any sugars other than those found in human blood-group mucoids; as Springer points out, this assumption would be entirely unjustifiable.

The leaching process in soil is significant in that the blood-group substance remaining for analysis in buried bodies may only be the alcohol-soluble fraction. This elementary but important point is often ignored in the published techniques. While I am in complete agreement with the points made by Springer, I should like to draw attention to the absence of evidence on rates of decay of the blood-group substances in bodies buried under varying conditions and for varying periods.

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The Makara in Ceylon

In your issue of 22 April [*Science* 131, 1176 (1960)], Millard B. Rogers, in the article "An archeological pilgrimage to Santiago de Compostela," states that "the *makara* occurs in the earliest monumental sculptures of India, as early as the 3rd century B.C."

Makara scrolls are well known in the ancient ruined cities of Ceylon, chiefly Anuradhapura and Polonnaruwa, where these scrolls generally occur as the rails of the balustrades beside entrance steps to what little is left of the ancient buildings. The buildings, and hence the *makara* scrolls, can seldom be precisely dated, however. Anuradhapura was the capital of Ceylon from the 5th century B.C. to the 9th century A.D., but it is likely that its great period of sculpture began when Mahinda, son of the Indian emperor Asoka, brought the Buddhist doctrines to Ceylon about the middle of the 3rd century B.C. Polonnaruwa, which with considerable fresh Indian influence continued the Anuradhapura traditions of sculpture, was the medieval capital of Ceylon.

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N. A. Forde's letter to the editor concerning my article is a bit ambiguous, for it neither disproves my hypothesis nor supports it. For those concerned with Far Eastern archeology it simply repeats what we already know.

There is one point, however, that should be clarified. Forde's implication that traditional dates concerning religious sites should be applied to artifacts found at the sites without supporting evidence is most unsound, and I feel that I should reply to this point.

It is true that the *makara* occurs in Ceylon and in all other countries where Buddhism and Hinduism were introduced. There is, so far as I know, no evidence that any existing sculptures in Ceylon can be assigned with certainty to Asokan times, and the earliest Sinhalese *makara* is one reproduced by D. T. Devendra [*Classical Sinhalese*

Sculpture (London, 1958), Fig. 42]. There is a rich literature on Sinhalese archeology, of which the *Annual Reports of the Archaeological Survey of Ceylon* (1884 to date) form the core.

Since the tradition of the *makara* in literature predates the earliest known *makara* by several centuries, I would not be surprised if one day pre-Buddhistic *makara* were identified in India. It is less likely that any very early *makara* will ever be discovered in Ceylon.

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