Davidstow Anticline. The narrow outcrops of individual formations have been traced inland by Dewey (1948, Fig. 4) from the coast near Boscastle for at least 15 miles east-south-eastwards to Launceston. Such continuity could be achieved, and maintained, by repetition of kindred structures facing first south-west and then south-east along the length of the outcrop.

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TRACE ELEMENTS IN TANGANYIKA TUFFS

SIR,—The significance of trace element analyses obtained by Bowden (unpublished work) to determine the origin of the carbonate matrix of northern Tanganyika tuff cones, has been summarized by Dawson (1964). The object of investigating tuffs for certain trace elements, typical of carbonatites, was first applied to two calcareous types (Table 1) collected by Quennell from Longido (north-east corner of Text fig. 1, Dawson, 1964, p. 130). Because of high barium and strontium, together with lanthanum, yttrium and niobium (Table 1, analysis 1), it was concluded that the tuffs had been derived from nearby volcanoes and were the result of carbonatitic activity. Similar conclusions have been deduced by Downie and Wilkinson (1962) by assessing the geological evidence for the Basotu area.

Recently, tuffs, calcareous tuffs, and limestones from the Serengeti region have likewise been analysed for trace elements. These rocks, mapped on a regional scale over an area exceeding 5,000 square miles, usually consist of mineral grains of sanidine, pyroxenes, amphiboles, mica, etc., embedded in a carbonate matrix. The rocks vary from coarse tuffs (grain size *ca.* 2 mm.) in the east, near the volcanoes, to almost pure limestones in the west. Averaged chemical data are presented in Table 1. Niobium and yttrium are detected in the majority (twenty-two) of the specimens, and it is significant that lanthanum ranges from 50 to 600 p.p.m.

The geological and geochemical evidence both indicate that explosive carbonatitic volcanoes ejected vast amounts of pyroclastic material, which was deposited as tuffs, calcareous tuffs, and limestones, up to 100 miles from the parent volcanoes.

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Table 1.—Trace Elements in Tuffs, Calcareous Tuffs and Limestones.

	1.	2.	3.	4.
Li	<3	< 3	15	3
Ti	2,000	2,000	2,000	300
V	10	10	35	1
Cr	1	10	30	3
Co	3	3	2	2
Ni	20	50	10	25
Ga	3	3	10	—
Rb	< 50	< 50	190	—
Sr	2,500	2,500	550	550
Y	200	< 5	160	1
Zr	200	100	400	30
Nb	75	10	200	—
Ba	3,500	1,500	700	1,200
La	700	60	200	60

All values in parts per million.
Precision ± 40 per cent.

1.} 2.} Calcareous tuffs, Longido.
3. Averaged data for twenty-four tuffs, calcareous tuffs and limestones, Serengeti region.
4. Averaged data for three carbonate tuffs, Dawson (1964), Table 1, analyses 4, 6, and 7.

THE PROBLEM OF THE SOURCE OF JADE USED FOR POLISHED STONE AXES IN BRITTANY

Sir,—Since my paper on Jade axes from sites in the British Isles was printed, Professor Giot has brought to my notice further information bearing on the search for a source of jadeite in Brittany. This information is contained in a paper by J. Cogné and P. R. Giot (1957) on the petrography of the polished stone axes of Brittany and in two papers by J. Cogné on the crystalline schists and granites of southern Brittany.

In their 1957 paper the authors state that in some of the jade axes they have examined glaucophane and garnet occur associated with the pyroxene, and that this association of minerals is also to be found in some of the glaucophane-rocks of Ile de Groix. In the same paper they also record the finding " dans les champs " of a jadeite-rock with garnet associated with eclogite with glaucophane, presenting characters very near those of the Breton axes. This find was made near Bouvron to the north of Nantes.

The association of jadeite with glaucophane and garnet in the Ile de Groix is described by J. Cogné in his petrographic memoir (1960). He describes a