

which Mr. Kraus bases a second argument, is to my mind of no significance. The benitoite and the natrolite matrix in which it occurs are clearly secondary and must have been formed from percolating solutions. Even if it be assumed that these solutions were also basic it by no means follows that the titanium which they contained would take the part of a base, on the contrary it is more probable that it would take the part of an acid. Associated with the benitoite are two other titanium-containing minerals, namely, titanite and a mineral to which the name carlosite was given, but which we have since shown to be identical with neptunite. All three minerals are found in the natrolite matrix and appear to have been formed contemporaneously. There is good reason for supposing that titanium takes the part of a base in both titanite and neptunite and it is not probable that a third mineral formed under similar conditions would differ in this respect.

There is on the contrary much to be said in favor of the formula suggested by Mr. Louderback. The properties of the element titanium, when in this degree of oxidation, are clearly those of a very weak acid. The entire lack of a definite compound of titanium and silicon, in view of the frequent occurrence of both oxides in the same formation, is striking. If benitoite is a double metasilicate of barium and titanium it is most remarkable that the proper conditions for the formation of both its constituent single salts have nowhere prevailed.

A cursory examination of the literature shows that many of the compounds in which titanium is supposed to take the part of a base have not been isolated in pure form, nor has their structural formula been satisfactorily determined. They are in all probability analogous to certain complex acids, such as those which phosphoric acid forms with the acids of the chromium group of elements rather than to simple salts.

Titanium is more closely related to silicon than to the more basic zirconium. Like the former element it shows a decided tendency to combine with itself and form complex

molecules, and the substitution of one element for the other in such a chain would not seem unreasonable. Further, there is nothing unreasonable in the formation of compounds containing such a relatively large percentage of acidic elements if the acidic elements represented are very weak in their properties and the basic elements are very strong in theirs; the compound borax furnishes a good illustration.

W. C. BLASDALE

DEPARTMENT OF CHEMISTRY,
UNIVERSITY OF CALIFORNIA

APPOINTMENTS IN AMERICAN UNIVERSITIES

To the Editor of Science: As a Scot, called some years ago to teach in an American university, I am much interested in Dr. S. J. Meltzer's communication, printed in SCIENCE of August 7, especially as two of the gentlemen to whom he refers are countrymen of my own. However, my purpose is not to traverse his protest, which seems to me well taken. Dr. Meltzer's letter involves a much larger question. I think that those of us who have to make recommendations for vacancies must have felt often that here, at least, we stand badly in need of a clearing-house. Why should not each great department of inquiry have its own bureau of information, to bring men and places together? Our present methods are largely haphazard, especially with reference to the less important appointments, whence the more important must be filled some day. One hears of vacancies after they have been settled; and one's knowledge of available appointees, especially of the younger men, is far from complete. Here is an opportunity for SCIENCE and similar publications to ventilate a need, with a view to common action.

R. M. WENLEY

UNIVERSITY OF MICHIGAN

SCIENTIFIC BOOKS

Musée Ostéologique. Étude de la Faune Quaternaire. Ostéométrie des Mammifères. Par EDMOND HUE Médecin Vétérinaire, Membre de la Société Préhistorique de France. Album de 186 planches contenant vi + 50, pl. 93. Deuxième Fascicule, pl. 2,187 figures. Premier Fascicule, pp.