TITANIC ACID IN THE POTATO TUBER

IN Bulletin 267 of the Colorado Experiment Station, entitled "Titanium, barium, strontium and lithium in certain plants," the writer considered the findings relative to titanium doubtful to a great degree, because of the contamination of ashes of the plants by dust that had been blown on to the plants.

This contamination amounted, in the case of a tobacco, to over 50 per cent. of the ash, also in corn leaves. As this contaminating material contained titanic acid, it became doubtful whether the plants contained any or not. All samples of ash prepared from field-grown plants contain more or less dust and sand.

The most satisfactory material found in the progress of that work was the ash of the potato tuber which can be well washed and a fairly clean ash obtained. Recently I had sufficient ash of this sort to justify an attempt to determine the titanic acid quantitatively. It was not only present, as in the former case, but amounted to 0.08 per cent. of the ash.

It seems probable that it was really present in the ashes proper of the other plants, most liberally in the ash of the corn leaves.

W. P. HEADDEN
COLORADO EXPERIMENTAL STATION,
FORT COLLINS, COLO.

CHEMICAL SPELLING CONTINUED

FOR a year or two very little mention has been made of chemical spelling in SCIENCE, but since considerable interest was manifested in the subject at the start, there is doubtless some curiosity felt as to its present status.

Chemical spelling is now in its fourth year at the West Virginia University. Four annual contests have been held here, including one during the first week in May of this year. The five students who received the highest rank in each of the preceding contests were granted "Roll of Honor" certificates bearing their names and the university seal. A copy of the certificates from each of these contests has been framed for the department of chemistry.

Over three hundred students entered the spelling matches each year and the winners are justly proud of their achievement. These certificates, hanging in a conspicuous place in the chemistry building, serve to remind first-year students of the impending contest, spurring them on to greater efforts to excel, not only in chemical spelling, but in all their chemical work.

Several other institutions are now beyond the experimental stage in chemical spelling, and in at least one section of the country, namely, the southwestern, intercollegiate spelling matches have been held. The progress of chemical spelling has been retarded to some extent by the fact that no suitable list of words and formulas was available in print and therefore had to be prepared. Mimeographed lists of about twelve hundred words were supplied to the students at the West Virginia University and a few other institutions, but these lists proved to be inadequate.

In order to meet the needs of the contests this spring I have prepared three lists of words, together with their respective chemical formulas, which have now been published in a book called "A *Pronouncing* Chemical Formula Speller," which appeared about April 20.

There are about three thousand inorganic and one thousand organic compounds included, besides about three hundred of the more common minerals. The words in these three lists are hyphenated, accented and supplied with diacritical marks. A key to pronunciation, as well as directions for holding contests, have also been included. The organic list has been carefully looked over and revised by Professor E. Emmet Reid, of Johns Hopkins University. As a matter of interest to those who are planning chemical spelling contests, it should be said that about fifteen hundred questions and answers, involving the typical reactions of the elements, have been included, the answers being expressed in the form of balanced equations.

A book of this sort is almost indispensable to chemical spelling and should facilitate the holding of intercollegiate contests. It would also be of value to students and instructors as a reference book. The 1925 International Atomic Weights and Atomic Numbers of the elements have been included.

C. A. JACOBSON
WEST VIRGINIA UNIVERSITY

MUSSELSHELL RIVER

APROPOS of the "Muscle Shoals" *vs.* "Mussel Shoals" question it may be of interest to note that what is now known as "Musselshell River," a tributary of Missouri River in central Montana, was formerly known as "Muscleshell River."

The form "Muscleshell" is used in H. V. Hayden's report on the Geological Exploration of the Yellowstone and Missouri Rivers, which he made as assistant to Brigadier General W. F. Raynolds in 1859–60. General Raynold's report uses the same form, and both seem to have followed the example of Lieutenant J. Mullan who went through the country in 1852.

In the report on the expedition of 1875 from Carroll, Montana, to Yellowstone National Park and return, under Captain William Ludlow, the form "Mus-

selshell" is used. Messrs. G. B. Grinnell, E. S. Dana and R. P. Whitfield were the scientists of this expedition.

HAROLD S. PALMER
THE UNIVERSITY OF HAWAII,
HONOLULU, HAWAII

SCIENTIFIC BOOKS

La "Thiende" de Simon Stevin. Facsimilé de l'édition originale plantinienne de 1585. Avec une introduction. Par H. BOSMANS, S. J. Édition de la Société des Bibliophiles Anversois, No. 38. Anvers, Marché du Vendredi, 22. 1924. Pp. 42 + 37. 15 Belgian Francs.

THIS facsimile reproduction of the earliest presentation of the theory of decimal fractions will be welcomed by every one interested in the history of mathematics. Copies of the original editions of some of the works of Stevin are very rare. In fact, as Bosmans points out, since the destruction of the Library of Louvain no copies of the Appendice Algébraique de Simon Stevin, 1594, seem to exist. That appendice contained a resolution of numerical equations by approximation, published six years earlier than Vieta's process of approximation, and is regarded by some as the superior of the two. Original copies of Stevin's booklet on decimals, La Thiende, are also very rare. At the time of the destruction of the Library of Louvain, the copy belonging to that library had been loaned to Professor Bosmans in Brussels and was thus saved. Bosmans has been able to learn of only four copies of this now extant. Hence his facsimile edition is a praiseworthy step toward conservation.

Bosmans gives a long historical introduction which in itself is very valuable, for he has for many years made a study of sixteenth and seventeenth century mathematics and especially of the contributions made at that time by mathematicians of Belgium and Holland. In that field he speaks with authority.

The charm of Stevin's treatment of fractions lies in his quaint notation. Though clumsy in practice, it is of interest, because the fundamental idea of an exponential notation (powers of one tenth) are involved in it. Moreover, the same symbols, with a slightly different interpretation, appear in Stevin's algebra.

FLORIAN CAJORI
UNIVERSITY OF CALIFORNIA

Mosses with a Hand Lens. By A. J. GROUT. Third edition. Pp. XV + 339. Published by the author (1 Vine St., New Brighton, N. Y.), 1924.

AS the founder and until recent years editor of the *Bryologist* (the only journal in the English language which is devoted to bryophytes), as one of the organizers and first president of the Sullivant Moss Society, and as the author of several books and numerous papers on the subject, Dr. Grout has contributed more than any one else in this country toward popularizing the study of the mosses. The first edition of "Mosses with a Hand Lens" was published in 1900 as a thin volume of about 75 pages and, save for brief mention of the sphagnums, dealt exclusively with the true mosses. The present edition, more than four times the size of the first, includes not only the sphagnums and the true mosses but the liverworts as well, the author's treatment of this latter group which appeared in the second edition having been revised and amplified by Dr. M. A. Howe. The book comprises descriptions and keys to the mosses and liverworts, based for the most part on characteristics which can readily be made out without the aid of a compound microscope. It is copiously illustrated with no less than 83 plates and approximately 200 text figures. Noteworthy among these are a large number of photographs, for the most part admirably executed. The book is the best non-technical treatise on the bryophytes of this country that has yet appeared, and as such will be welcomed by all who are interested in the study of this rather difficult group of plants.

G. E. NICHOLS
YALE UNIVERSITY

SCIENTIFIC APPARATUS AND LABORATORY METHODS

WATERPROOFING LABELS FOR WET SPECIMENS

THE impaired value of specimens without the identifying tag is well known to laboratory workers and collectors. In the case of wet specimens especially the fading of the lettering and erosion or tearing of paper labels is serious, but has a remedy which some field and laboratory workers may not yet have found. The remedy is to waterproof the labels. Perhaps the best material is paraffin. It is apparently no more difficult to provide and use paraffin than to provide and use a so-called waterproof ink.

The label may be written with anything sufficiently opaque: lead pencil, red or blue pencil, any kind of ink. Typewritten labels are best. If the labels are written in a block on a rather large sheet, a few shavings of paraffin may be scattered upon it and melted over flame or oven. A pot of melted paraffin will at times have certain advantages. For an occasional label, a small bottle of paraffin in saturated solution may be kept on hand. Xylol is the best solvent tried. After dipping the label and dry-