for it. Any scheme that is workable may do well enough for the mere purposes of an international congress. But he would have us or, at any rate, the literary audience to which he addresses his exposition, believe that he has at last solved one of the great philosophical riddles. "The real interest," he says, "lies in the logic of the arrangement. The logical problem how to bring order into the wilderness of scientific efforts has fascinated philosophers from Aristotle and Bacon to Comte and Spencer. The way in which a time groups its efforts toward truth becomes, therefore, also a most significant expression of the deeper energies of its civilization, and not the least claim which our coming congress will make is that the program of its work stands out as a realization of principles which characterize the deepest strivings and the inmost energies of our own time as over against the popular classifications of the nineteenth century." Thus does the new scheme triumph over all difficulties!

If this were true, or even in part true, the scheme would be very important to men of science. Unfortunately, however, a glance at the divisions and subdivisions of the scheme seems to reveal only another of the numerous systems of *à priori* philosophy carried to the extremes which border on absurdity.

It is needless to discuss in detail a scheme at once so pretentious and so vulnerable. One should see a copy of the 'Program,' or read the exposition of it in the *Atlantic Monthly*. I will only add, Mr. Editor, that while we may not go out of our way to oppose philosophers and literary folks who indulge in such extravagances, it is our duty to repudiate them when they appear in the public press in the guise of science; for they tend only to make science and scientific men ridiculous.

R. S. WOODWARD.

ANTARCTICA.

TO THE EDITOR OF SCIENCE: If Dr. Mill will look anew through 'Antarctica,' he will be unable to find one line criticizing him. I spoke of him necessarily in my letter (SCIENCE, July 10), because he happened to review the monograph. I can assure him I am most pleased with his review and his letter (SCIENCE, August 7) for they help in forcing the facts about antarctic exploration to the notice of scientists. Gradually the truth will be recognized.

That some English geographers persist in ignoring American antarctic explorers is once more demonstrated in the July *Geographical Journal*. In the sketch map of the National Antarctic Expedition, on which the ink is hardly dry, the name of Wilkes Land is omitted as usual. Clarie Land appears once more, regardless of the fact that there is no Clarie Land. D'Urville called some ice cliffs Côte Clarie but he did not see the land behind them, which was discovered, however, a few days later by Wilkes, and which he named Cape Carr. The name of Graham Land is applied again to the land massif which was known as Palmer's Land for about ten years before Biscoe's voyage. I suggested that the name West Antarctica be given to that region, partly in the hope of reconciling international prejudices.

The final suggestion of Dr. Mill deserves unqualified approval. Would it not be possible to send an American expedition, either private or governmental, to reexplore the coast of Wilkes Land? A steamship like the *Bear*, commanded by naval officers, should be able, in the course of one southern summer, to bring back fresh data about the land discovered by Americans in East Antarctica.

EDWIN SWIFT BALCH.

YORK HARBOR,
August 10, 1903.

## SHORTER ARTICLES.

### KUNZITE, A NEW GEM.

DURING an extended investigation on certain optical properties of the Tiffany-Morgan Gem and Bement Mineral Collections in the American Museum of Natural History it has been my privilege to examine the new lilac-colored transparent spodumene described by Dr. Geo. F. Kunz in SCIENCE, August 28.

Mineral spodumene is usually obtained in large opaque whitish crystals, but from time to time small specimens, often richly colored

and transparent, are found. The three characteristic varieties of the latter are a clear yellow gem spodumene of Brazil,* the green hiddenite or 'little emerald' of North Carolina,† and the lilac sometimes found in Connecticut.‡ These are without doubt remnants of large specimens, which must have been elegant. Spodumene is very subject to alteration and has usually lost all its transparency and beauty of tint.

Kunz (*loc. cit.*) described some large and magnificent crystals of unaltered spodumene, of rich lilac color, which have recently been discovered near Pala, San Diego County, California, in connection with certain other lithia minerals. It has been my good fortune to see and handle from this locality massive spodumene crystals ($10 \times 20 \times 4$ cms.) perfectly clear, of a rose lilac tint, varying with the spodumene dichroism, from a very pale tinge when observed transversely to the prism, to a rich amethystine hue longitudinally. No such crystals of spodumene have ever been seen before and the discovery is of great mineralogical interest. The crystals have been etched by weathering and have a twinning like the hiddenite variety. The mineral, when cut and mounted parallel to the base, gives gems of great beauty. The chemical analysis, which is under way in my laboratory, will shortly be published.

The observations of Dr. Kunz sufficiently characterize this mineral of peculiar beauty as a new gem, which he has not named. I have submitted large crystals to the action of ultra-violet light without any evidence of fluorescence or phosphorescence. When subjected to bombardment of the Röntgen rays of high penetration for several minutes no fluorescence is observed, but on removal to a dark chamber it exhibits a persistent white luminosity not observed with this class of minerals, as learned by experiments with altered and unaltered spodumene from the localities mentioned, including cut stones and such handsome crystals of hiddenite as afforded by the collections mentioned. I have been able to excite a crystal ($2 \times 4 \times 10$ cms.) by the action of the X-rays for five minutes sufficiently to cause it to photograph itself when subsequently placed directly upon a sensitive plate (thin white paper being interposed) and allowed to remain in an especially constructed padded black box in a dark room for a period of ten minutes. The material is penetrated by the rays as shown by a cathodograph. The excitation is not superficial, but persists throughout the mass. On account of this unusual and characteristic phosphorescence, as well as the other properties, I propose the name *Kunzite,* for reasons unnecessary to give to American and European scientific men. The mineral material and cut gems may be seen at Tiffany and Co.'s or the American Museum of Natural History, New York.

* Pisani, *Comptes Rendus,* 84, 1509, 1877.

† J. L. Smith, *Am. J. Sci.,* 21, 128, 1881.

‡ Penfield, *Am. J. Sci.,* 20, 259, 1880.

Charles Baskerville.

August 12, 1903.

## The Toxic Effect of H and OH Ions on Seedlings of Indian Corn.

Within the last five years or so some attempt has been made to determine the toxic effect of various chemical solutions upon plant life. This involved the theory of ionization, which is based upon the electrical conductivity of solutions.

When acids, bases or salts are put into solution, they separate, more or less completely, into molecules or part molecules of their elements, or into groups of two or more atoms of different elements which are very strongly united. Molecules which exist in this state are known as ions—*e. g.,* if 100 molecules of HCl were put into solution they would separate to form H ions and Cl ions, and probably there would be some HCl ions left, depending upon the strength of the solution. If NaOH were put into solution a like separation would take place except that OH ions and Na ions would be formed in place of the H ions and Cl ions.

All compounds do not permit total dissociation at the same dilution. "Solutions of hydrochloric, nitric and sulfuric acids are nearly completely dissociated when an equivalent in grams is dissolved in 1,000 liters of