systems of measurement of dimension, capacity, weight, etc. They substituted the exact centigrade thermometer with 100 degrees between freezing and boiling of water, for the system without absolute bases. They gave America and other countries an exact decimal system of moneys. They devised a decimal system for classification, for books, correspondence, etc.

But in the field of sound-notation or sound-representation, nothing comparable with the foregoing contributions to the world's progress and civilization has been done. For untold ages, the general capacity of the human vocal organs to make sounds has been the same. Each has the same provision of lips, teeth, tongue, palate, and the same provision as to lungs, larynx, windpipe, pharynx and nasal passages. Every normal person can, if trained, at least when young, make exactly the same vocal sounds as can any other normal person.

Ages ago men began to use these vocal sounds to express ideas; spoken languages resulted. Ages later "Cadmus, the Phenicians, or whoever it was," Egyptians, or others, struck upon the thought that a certain mark might stand for a certain sound. An alphabet was devised. Others developed, either offshoots of the first, or independently. To-day we have many alphabets. They were made originally for a particular language or dialect, and were limited to the sounds of that tongue; or they were borrowed from another people and but imperfectly suited the sounds of the borrowing language. None was made for all mankind; none was devised and none is adapted for the whole world. To-day in the new era after the war, the world needs an alphabet, a universal alphabet, a world-alphabet, a standard set of signs, characters or letters, full and complete, so that every sound used by any collection of human beings to indicate (alone or with other sounds) an idea, or to form a word of spoken language or dialect, shall be represented by one letter and only one letter; and so that every such letter shall stand for one and for only one sound.

The Roman alphabet which we and much of western and southern Europe uses, the Gothic, used (not to the exclusion of, but rather concurrently with Roman) by Germans and some Scandinavians, the Greek of Greece, etc., the Cyrillic of Russia and other peoples, the Gaelic, the Anglo-Saxon futhorc, the many cursive characters of Arabic, the Indian alphabets, the ideographs of the Orient, the special alphabets devised for aboriginal tribes of America, Africa and elsewhere—none meets the requirements set out above for a universal, world-alphabet. Such standard alphabet must be a scientific creation, or adaptation and adoption from present alphabets.

In the reorganization of the world at this time, a world conference of scholars and students, versed in many lines of art and science, should be held to devise and present a world-alphabet for consideration and adoption.

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NONSILVERABLE CONTAINERS FOR SILVERING MIRRORS

Under this title[1] the writer has recently called attention to the observation that certain samples of "granite ware" enamelled iron pans did not seem to attract silver, in the ordinary process of silvering glass mirrors. However, it was not intended to convey the idea that one would expect this to hold true as a general rule.

Just why these pans did not take on a coat of silver while certain white enamelled pans did receive a thick coat of silver, is not understood—as is true of a great many other phenomena observed in attempting to deposit silver chemically upon glass. For example, it has been found easier to silver optical (white crown) glass than a certain mirror made of ordinary plate glass. One concave mirror, which is made of ordinary glass, always shows a spot where the deposit of silver is different from the rest of the surface, even after making a special effort in polishing and cleaning the glass surface. Again, making a container by tying a rim of clean writing paper around the edge of a glass disk, good mirrors were pro-

[1] Science, 48, p. 345, 1918.

duced; but no silver was deposited on the paper. Washing the glass with a certain kind of soap appears to interfere with the silvering process; while another kind of soap seems to be as effective as caustic potash.

Using a glass container, partially filled with the silvering solution, then (after the deposition of silver had started) filling the container with solution it was found on completion of the operation, that but little silver had deposited on the upper half of the container. The line of demarcation was sharp, just as though, once the deposition of silver had begun, the metal was attracted more readily to that part, of the receptacle. To conclude, it seems worth while to find a container that will not attract silver.

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WASHINGTON, D. C.,
January 6, 1919

SYSTEMATIC PAPERS PUBLISHED IN THE GERMAN LANGUAGE

MY friend, Dr. W. T. Holland, has sent me copies of his article on the above subject in SCIENCE of November 8.

We are all agreed in our wish for the advance of knowledge and that the "eternal verities" are the only thing that will count in the long run; but in zoology the Russian, Hungarian, Japanese and other languages have never been recognized and I can not think that Dr. Holland himself would recognize descriptions published in the language he cites—Choctau. German is, without doubt, a barbarous language only just emerging from the stage of the primitive Gothic character, and I venture to suggest that it would be to the advantage of science to treat it as such from the date August 1, 1914. The science of botany is in many ways in advance of zoology. At the Botanical Congress at Vienna in 1905 men of Russian and various other nationalities objected to their languages not being recognized in science and it was found that the only method of arriving at an agreement was to insist on a Latin diagnosis being added in systematic papers in all languages, and this was agreed to. This regulation, though it has obvious disadvantages, may be found necessary in zoology also, the only alternative that I can see being descriptions in either English or French, the language of diplomacy. In recent Japanese works on entomology an English description is always added to the Japanese text.

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SCIENTIFIC BOOKS

A Synopsis of the Bats of California. By HILDA WOOD GRINNELL. University of California Publications in Zoology, Vol. 17, No. 12, pp. 223–404, pls. 14–24, 24 figs. in text. January 31, 1918.

This work constitutes a notable contribution to the literature of California mammalogy and is characterized by the minute detail, thoroughness of treatment, and painstaking accuracy which one has come to expect in the publications of the Museum of Vertebrate Zoology of the University of California.

Following the introduction, the treatment is taken up under main headings as follows: Senses of bats, habits, voice, enemies, economic value, origin, geographic distribution, dentition, coloration, age-variation, sexual variation, nomenclature, classification, keys for identification, and table of comparative measurements, followed by treatment of the thirty-one forms belonging to eleven genera and three families of bats represented within the geographic limits of California.

Under each specific or subspecific heading appears a full annotated synonymy embracing the nomenclatural changes leading up to the name in current use and all references to the form as occurring in California. The particular species or subspecies is then discussed under the headings, diagnosis, description (including head, limbs and membranes, pelage, color, skull, teeth, measurements), synonymy and history, distribution, specimens examined, and finally natural history.

Data on senses and habits of bats are presented, chiefly compiled from the work of Halm, Ackert, Merriam, Miller, Howell and others, but supplemented by original observa-