scattered black spots and spotted undersides of *B. americanus*. All this, in conjunction with Mr. H. A. Allard's notes and observations, would lead one to believe that both species are closely related, and that they possibly interbreed occasionally, these forms with the characteristic marks, etc., of both species representing the hybrids.

In conclusion I will state that the typical *B. americanus* and the typical *B. fowleri* differ in the following characters, based on examination of hundreds of specimens, covering a period of ten or more years:

Bufo americanus Le Conte

1. Head broad, profile sloping towards tip of snout.
2. Cranial crests always diverging from the nostrils.
3. Skin covered with comparatively large round warts, often arranged in rows or groups, the former on the back, the latter on hind limbs. The undersides are more or less granular. The larger warts often have spiny tips, especially in large females.
4. The legs are stout, and moderately long, the foot large and thick, the fingers rather short and thick.

Bufo fowleri Putnam

1. Head narrow, very thick, profile abruptly rounded towards the tip of the snout.
2. Cranial crests sometimes parallel, often fused in the midline, forming a distinct lump between the eyes. This never occurs in *B. americanus*.
3. Skin finely granular above, with groups of larger warts. These warts are *never* spiny in this species. The under sides are either very finely granular or entirely smooth.
4. The legs are longer, in proportion to the body, than of *B. americanus*, the foot is rather delicate, fingers and toes are long and slender.

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THE POPULAR NAMES OF NORTH AMERICAN PLANTS

To the Editor of Science: In the course of our work here, considerable numbers of plants are frequently sent in by teachers to be named, and doubtless many similar requests for information are received by the officers of the provincial governments and the experiment stations throughout the United States. In replying to such enquiries the Latin name of the species is always given and the English name where such exists. It is clear, however, that pupils in the public schools, as well as many of their teachers, do not and can not reasonably be expected to take any interest in or to remember the Latin names of plants. This being so, it is highly desirable that every species of plant inhabiting the United States or Canada should have an English name. It is further desirable that the name should not be a local one, but should be applicable to the plant wherever it is found, from the Atlantic to the Pacific ocean. If possible, the name should be such as to distinguish the plant from allied species, the name being based on some structural character such as height, hairiness, color of flowers, etc.; or on the habitat, such as marsh, mountain, wood, etc.; or on its use in the service of man, Indian names when such exist being adopted.

Where different genera have the same English name, some qualifying word will be specially necessary. For example, fireweed may mean either *Erechtites hieracifolia* Raf., or *Epilobium angustifolium* L. This ambiguity would be removed by calling the former white fireweed and the latter purple fireweed.

In order that each species of plant may have an English name, it would be necessary to draw up a list of the species inhabiting the United States and Canada, and it seems to the present writer that in drawing up such a list a very wide interpretation should be given to the meaning of the term species. At the present rate of progress, it will be many years before the "North American Flora"—the standard work on the subject for this continent—will be completed, and discussion as to the limits of so-called species may be expected to continue for a much longer period. Consequently, a provisional list should be issued, no attempt being made to define the limits of a species in too critical a manner, the popular English names not being suited for such fine distinctions. The common English name should be applied to aggregate rather than segregate species. For example, pipsissewa or prince's

pine should be regarded as applicable to either *Chimaphila corymbosa* Pursh., or *C. occidentalis* Rydb., the two species into which *C. umbellata* Nutt. has been split up in the "North American Flora."

There is, of course, room for discussion as to the best method of procedure to adopt. Many botanists—especially those who are never called on to name plants for the general public—are quite satisfied with the Latin names alone, and from them in all probability no assistance can be expected in devising English names. The subject is one that might well be discussed at some conference of American botanists, as it mainly concerns ourselves alone.

J. ADAMS

CENTRAL EXPERIMENTAL FARM,
OTTAWA, CANADA,
November 21, 1916

PROPULSION BY SURFACE TENSION

TO THE EDITOR OF SCIENCE: In November, 1911, I described in your columns a little motor boat which I supposed to be novel. A wooden boat only a couple of inches long, was provided with a stern consisting of a slab of soap, and when placed on clean still water moved about with noticeable rapidity.

I have just learned that M. Henri Devaux constructed an absolutely equivalent craft many years ago (*La Nature,* April 21, 1888). His boat was made of tinfoil and the "propeller" was a scrap of camphor attached to the stern.

Pray allow me to tender to M. Devaux my apologies and compliments.

GEORGE F. BECKER

SCIENTIFIC BOOKS

A Sylow Factor Table of the First Twelve Thousand Numbers. By HENRY WALTER STAGER. Carnegie Institution of Washington, 1916. Pp. xii + 119.

Dr. Stager's tables are intended to furnish the possible number of Sylow subgroups for all groups whose order does not exceed 12,000. For every number within that limit are listed all the divisors which are of the form $p(kp+1)$, where p is a prime greater than 2 and k is greater than zero. In determining the possible number of Sylow subgroups such divisors must be known before further methods are applicable. Thus from the table we learn that 1,080 is divisible by $3(1\times 3+1)$, $3(3\times 3+1)$, $3(13\times 3+1)$, $5(1\times 5+1)$, $5(7\times 5+1)$ and $5(43\times 5+1)$. From these results we know that for a group of order 1,080 there may be 1, 4, 10 or 40 subgroups of order 3^3 and 1, 6, 36 or 286 subgroups of order 5. The exact number is to be determined by other principles of group theory. The table also gives the expression of each number up to that limit as products of powers of primes.

The making of tables, a tedious and apparently mechanical task, is of the highest importance in all branches of science. It is likely that more fundamental theorems have been discovered by the examination of listed results than by any other means. This is certainly true in the theory of numbers, and it is possible that workers in the theory of groups have not made enough use of this method of investigation. The construction of tables for the theory of groups is especially difficult on account of the great complexity of the material. Only brief tables have hitherto been undertaken and it is to be hoped that Dr. Stager's work in this direction may be the beginning of a systematic campaign in this important field.

The construction of an extensive table almost always brings to light hidden relations, suggesting new theorems for investigation. In Dr. Stager's table certain numbers are noted which have no divisors of the sort indicated above. Such numbers seem to resemble primes in many ways, and in particular their "curve of frequency" seems to run roughly parallel to the corresponding curve for primes. Dr. Stager has made a study of these numbers, and has added a list of them up to the limit of his table.

The author is to be congratulated upon the completion of so important and formidable a piece of work. While the reviewer has, of course, not checked over any part of the table he has the utmost confidence in the accuracy of the list. The printing has been done by the