The biologist is ready to receive new evidence but it is difficult to see how he can trim known facts to suit the opposition. However, science holds the key to the situation. The key is evolution itself, the evolutionary interpretation of history, especially the religious and literary history of the Hebrew people. This rather than biology would quickly become the storm center if it were taught in our high schools. It can not be done at present, but when historical science percolates more thoroughly into the Sunday schools the opposition to the teaching of evolution will dissolve. In the mean time the biologist bears the brunt of opposition because his pupils (or their parents) are not prepared for his message. He has to offer a new interpretation of life, a new basis of ethics, which is in opposition to tradition. He is usually better fitted to discuss and to appreciate the beliefs of the non-scientifically trained man than is the latter to discuss the scientific view, because the biologist has not always been a scientist. The scientist is a trained seeker for truth. His past beliefs, experiences and mental conflicts form a valuable intellectual background. The non-scientifically trained person can not claim a similar appreciation of the scientific view. The biologist must have something of the spirit of a missionary and if necessary that of a martyr.

J. HOWARD BROWN

PRINCETON

TINGITIDAE OR TINGIDAE

IN his discussion of this family name in a recent number of SCIENCE, Dr. W. J. Holland has provided us with an excellent review of the philological and nomenclatural facts in the matter, but he fails to mention certain items which have a bearing on the question.

Some years ago in a review of Van Duzee's "Check List of the Hemiptera" (*Psyche*, XXIII: 129, 1916), I stated very briefly my reason for adopting the form *Tingidæ* and it seems necessary to bring forward this argument again to the end that nothing pertinent be overlooked in reaching our decision. In connection with his original proposal of the generic name *Tingis*, Fabricius ("Systema Rhyngotorum," 1803, p. 124) *himself* uses the genitive *Tingis* in a foot-note, and accordingly we must adopt the family form *Tingidæ*, unless we can prove that the author was in error regarding the genitive form of his own generic name. When I first considered the question I took into account the facts which Dr. Holland adduces, and I came to the conclusion that we can not be sure that Fabricius did in fact adopt the Greek word Τίγγις, the name of a city; on the contrary, his use of the genitive *Tingis* shows us that he considered the word his own and indicates what its Latin declension should be.

Until this argument is disposed of I shall consider it necessary to use the form *Tingidæ*, as proposed by Westwood in 1840.

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THE VACUUM TUBE AMPLIFIER IN SCIENTIFIC WORK

THE amplification of sound by means of the triode vacuum tube has now passed on from its application to wired and wireless telephony to a means of aiding those of deficient hearing. Its effectiveness is so great that it promises to be to the partially deaf as great a boon as glasses to those optically defective. The use of the amplifier is sure to expand rapidly in this field, although it will be somewhat impeded by its expense.

The purpose of this note, however, is to call attention to the application or applicability of a sound magnifier in various fields of scientific work and industry:

1. For detecting distant underground operations as in mine rescue or military work.

2. Detecting the approach of a boat, train or automobile before it comes in sight.

3. Detecting the approach of a storm.

4. As a parallel instrument to the binocular prism glasses of the ornithologist, to detect bird songs too far to be heard distinctly or at all. It is particularly useful in detecting the higher notes that do not carry far and in observing nocturnal migration.

5. To aid the hunter in detecting sounds of distant game.

6. In conversation from vessel to vessel or station to station at shouting distance and a little further.

7. In directing men aboard or on shore.

8. To extend the possibilities of the dictograph in detecting evidence of crime.

9. To make possible addressing larger audiences and distant audiences.

10. To make it possible for some women with weak voices to nevertheless speak to large audiences.

11. In acoustical research for the study of subliminal sounds.

12. The detecting of subliminal sounds from animals not now known to make sounds.

13. To make more audible the whispers or weak sounds of the sick or injured.

14. To make communication by weak or injured less fatiguing.

That commercial equipment of good efficiency is now readily available may not be known to some of those who might make good use of the apparatus.

ROSWELL H. JOHNSON

PITTSBURGH, PA.,
SEPTEMBER 22, 1922

CHEMICAL SPELLING

HURRAH for Professor Jacobson and his "chemical spelling match" at the West Virginia University, as described in SCIENCE for September 29! Twenty odd years' experience, when permanent secretary of the American Association for the Advancement of Science, in reading the proofs of the program of the chemical section, gave me some definite opinions of chemical terms. I was delighted, in reading the preface to a book recently published by the veteran naturalist, Auguste Forel, to note the expression *la vraie science est l'ennemie des grands mots.* Is it a plain inference from Forel's dictum that chemistry is not a true science?

L. O. HOWARD

QUOTATIONS

BIOLOGICAL STAINS

THE stains employed by a worker in a series of investigations, and other workers repeating his methods, should involve identical materials. It is not necessary that the chemicals should be "pure"; indeed, the results from a particular method have sometimes been due to an unknown impurity, so recalling the famous salt in Stevenson's "Dr. Jekyll and Mr. Hyde." But they must be the same, if identifications are to be made by their use.

It was for these reasons and not from any superiority in German manufacture that authorities in microscopical technic so long ago advised the use of German stains and particularly those of Grübler of Leipzig. The advice was generally adopted, so that a practical monopoly of this small but important and profitable commerce in articles essential to medical practice and scientific research fell into German hands, to universal satisfaction. But the reason for the monopoly and the history of its institution were forgotten. When the war deprived allied countries and the United States of German imports of these chemicals, of which only very small stocks were held, manufacturers in other countries went into the trade. But their products were irregular in their action, did not always produce the familiar results and varied from maker to maker.

The supposed German scientific supremacy obtained another advertisement. It was demanded that importation of scientific stains should be allowed, or, alternatively, that by some great transformation, British, French and American skill should be brought up to the German level. Last autumn the National Research Council of America organized a practical inquiry into stains produced in America, obtaining the cooperation of workers in various branches of biological science. Their preliminary report has now been issued. Briefly, it dispels the idea of German superiority. American stains are often purer than the Grübler products; there is no difficulty in producing what is required. But the trouble is standardization; the stains of different manufacturers produce different effects.

It is suggested in the interests of science that the Research Council, after further inquiry, should determine a standard type for each stain, possibly recommending different manufacturers for different stains. But it is of importance that the standardization should extend beyond one country, so that the results of scientific investigation and the methods of bacteriological identification should be available for different countres. The whole business is small from the financial point of view, and it is to be hoped that standards will be adopted