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

by international cooperation.—The London *Times*.

SCIENTIFIC BOOKS

Readings in Evolution, Genetics and Eugenics. By HORATIO HACKETT NEWMAN. Chicago, 1921: The University of Chicago Press. Pp. XVIII plus 523.

Doubtless every college teacher who gives a general course in organic evolution has at times wished for the presentation in a single textbook of the materials he has found it necessary to have his students glean from numerous volumes. This need has been met by Professor Newman in the present book. The work is drawn up on much the lines of the "source books" in history which have become popular in recent years, and it will doubtless fulfill a similarly useful function for courses in evolution, genetics and eugenics. The wide range of matter necessary for such courses has been selected from the books and papers of many authors and reprinted in their own words, but the whole has been deftly knit together by means of occasional brief comments and passages written by the compiler himself.

One's preconception of such a presentation is that it must inevitably be a patchwork, but, as a matter of fact, Professor Newman, by judicious selection, has achieved a surprising unity. Another inherent difficulty in such a collection of articles and excerpts is the impossibility of touching out in otherwise excellent older accounts what, in the light of our more recent knowledge, are minor mistatements or contradictions; but here again, through careful choice, the defect has been reduced to a minimum.

The typographical errors observed by the reviewer are few. In line 6, page 294, *this is* should read *that is;* the numeral in line 16, page 365, should be 18 instead of 19; figures 87 and 88 on pages 434 and 435 have been exchanged.

The thirty-seven chapters (512 pages) are divided into five main parts: (1) Introductory and Historical (pp. 3 to 53); (2) Evidences of Organic Evolution (pp. 57 to 182); (3) The Causal Factors of Organic Evolution (pp. 185 to 283); (4) Genetics (pp. 287 to 456); and (5) Eugenics (pp. 459 to 512). Since the historical survey in Chapter II plunges one into the midst of genes, x-chromosomes, selection, orthogenesis, heterogenesis, Mendelism, biometry, etc., the general reader could find his way through this maze far more readily if a full glossary of scientific terms were appended. Such a glossary would also be very helpful in relation to other parts of the work.

In many colleges and universities the work in genetics and in organic evolution is given as separate courses. The reviewer, in fact, has used the volume under discussion in a practical way only as a text for a course in evolution. For such a purpose it would be advantageous to have the sections dealing with variation introduced before or along with the discussion of the causal factors of organic evolution. It is probable also that many teachers would, as does the reviewer, prefer to have the evidences from morphology presented before those from paleontology, but there is, of course, no reason why the user of the book may not take the various sections in this order if he so chooses. While to the initiated the chapters on Neo-Mendelian Heredity, Sex-linked and Other Kinds of Linked Inheritance, and Linkage and Crossing-Over are clear, succinct accounts, it is questionable if the beginner would get far with them without considerable additional elucidation on the part of the teacher.

In the opinion of the reviewer, Professor Newman has, in this series of readings, prepared for the general student the most complete and acceptable one-volume account of organic evolution and allied subjects in print.

M. F. GUYER

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SPECIAL ARTICLES

STATIC DEFLECTIONS OF THE VACUUM GRAVITATION NEEDLE, IN 1921 AND 1922

To obtain a comparison, it will be necessary to measure the distance apart, Δy (y being the telescopic scale reading, with the needle at rest), of the equilibrium curves corresponding to the two opposed positions of the attracting

[1] Advance note, from a Report to the Carnegie Institution of Washington, D. C.