the other hand the *d* and *f* sequents have as mantissæ multiples of the oun. The last two chapters are given to the monatomic gases and to the consideration of miscellaneous questions.

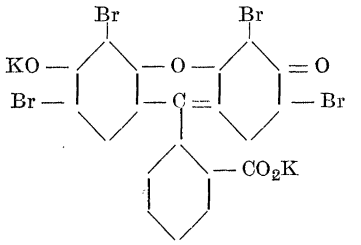
This book by Professor Hicks representing extensive researches for data and extended calculations based on the material collected and giving the views of one who has studied the subject so long and thoroughly will prove a welcome addition to a working library. It presents a general and connected view, provides a means of ready reference and suggests lines of investigation. It is well indexed and replete with references to original sources.

CHARLES E. ST. JOHN

AMERICAN EOSINS

IN a recent report of this committee[1] it was mentioned that a number of satisfactory samples of eosin had been obtained from American sources. At the time this early report was published no very definite data were at hand to show how these samples compared with samples of Grübler's eosin. At the present time, however, data have begun to accumulate giving a more satisfactory survey of the whole situation and it seems time to publish them.

Eosin is a compound of the phthalein series with a formula essentially as follows:



There are an almost innumerable number of different eosins on the market, differing slightly in chemical composition and having quite different staining properties and solubilities. They are usually classed in three or four groups denoted in Schultz's Farbstofftabellen, fifth edition, under the numbers 587, 588, 589 and 590.

Eosin 587 is the stain best known to the biologist. It is typically the same as the formula given above, namely the potassium salt of tetrabromfluorescein; but the monobrom and dibrom derivatives are also known, and as they sometimes occur mixed with the tetrabrom compound, the composition of this dye varies somewhat. Its color varies accordingly, because the more bromine atoms the bluer the shade. This dye is specified in the trade by such terms as eosin, yellowish eosin, eosin Y, and eosin G, water-soluble eosin, eosin W, eosin Y extra, eosin S extra.

Eosin 588 and 589 are both known as alcohol-soluble eosin, being only slightly soluble in water, but differ from each other in that 588 contains a methyl group in the place of one of the potassium atoms in the above formula while 589 contains an ethyl group in this same position. Number 588 is more correctly called methyl eosin while 589 is called eosin S or primrose.

Eosin 590 is a compound in which two of the bromine atoms have been replaced by NO_2-groups. This compound, like 587, is readily soluble in water but differs from it in its bluish color. It is known as bluish eosin, eosin B or eosin BN.

It must be understood that with such great variation in the possible composition, every manufacturer puts on the market a product slightly different from that of any other and as these compounds differ in shade each different product is generally known by its own trade designation. This gives the very confusing list of designations applied to eosin, of which those mentioned above are merely the commoner ones. It simplifies matters, however, if it is remembered that the terms eosin, yellowish eosin or water-soluble eosin refer to 587, while alcohol-soluble eosin refers to 588 or 589 and bluish eosin to 590.

No attempt was made in this work to get uniformity in the technic that was used, each collaborator being asked to use the samples for any purpose and according to any technic with which he was familiar. One of the investigators, in fact, reports five different tests to which he submitted the samples. As a result, these samples have been tested in a great

[1] Committee on Standardization of Stains: "Preliminary Report on American Biological Stains," SCIENCE, N. S., LVI, 156-160.

variety of ways and although it is hardly to be expected that the reports would be uniform under such conditions, it is felt, nevertheless that they have considerable value on account of the number of different methods by which the samples were tested. One of the collaborators tested the samples by the simple staining of bacteria; two used them for counterstaining in the Gram technic for staining bacteria. In three cases they have been tested in blood stains, in one case with hæmatoxylin, in another with methylen blue in the well-known Wright method, and in the third without combination with any other dye. Three of the investigators used the samples in tissue staining as a counter-stain against hæmatoxylin. One of the investigators, besides using the eosin in blood work and as a counterstain in the Gram technic, reports results obtained in staining cultures of *Penicillium*. These cultures after being killed and fixed were stained in mass, then mounted and examined. Lastly, another collaborator reports using the samples in two indicator media, one with brilliant green and the other with methylen blue.

The variety of these methods is sufficient so that there is good reason to feel that any sample which gave good results in all cases can be safely recommended. It was very clearly demonstrated that in the great variety of purposes for which these samples of eosin have been used, the American samples almost without exception are the best. Some may be slightly better than others for certain special purposes but there seems to be no reason for condemning any of them.

Satisfactory samples were obtained from the following American concerns: Eimer and Amend, Harmer Laboratories Company, Heller and Merz Company, N. Y. Color and Chemical Company, Providence Chemical Company, Darwin Chemical Company, Campbell and Company, Geigy Chemical Laboratory, Coleman and Bell Company, H. S. Laboratories, E. Leitz, National Aniline and Chemical Company Company and D. H. Pond.

The chairman of the committee is ready upon request to furnish investigators with information as to the apparent merits of each of these samples for particular purposes and as to how any particular one of these lots of eosin may be obtained.

Committee on Standardization of Biological Stains, National Research Council,

S. I. KORNHAUSER
F. W. MALLORY
F. G. NOVY
L. W. SHARP
H. J. CONN, *Chairman*

ZOOLOGICAL NOMENCLATURE

IN accordance with the provisions respecting the use of "plenary power" by the International Commission on Zoological Nomenclature, to suspend the rules in cases in which the application of the rules will produce more confusion than uniformity, the secretary has the honor herewith to notify the zoological profession that a proposition by Commissioner David Starr Jordan is now before the commission to suspend the rules in the following cases and to "definitely reject the works named below from consideration under the law of priority," namely:

Gronow, 1763, Museum Ichthyologicum.

Commerson (as footnotes in Lacépède Hist. nat. des Poissons, 1803 mostly).

Gesellschaft Schauplatz, 1775 to 1781. An anonymous dictionary accepting the pre-Linnæan genera of Klein.

Catesby, 1771, Natural History of Carolina, Florida and the Bahamas (1731 to 1750), revised reprint by Edwards, 1771.

Browne, 1789, revised reprint of Civil and Natural History of Jamaica (1766).

Valmont de Bomare, 1768-1775, Dict. Raisionnée Universelle d'Hist. nat. (several names accidentally binomial).

In connection with these works, attention is invited to Opinions Nos. 13, 20, 21, 23, 24, issued by the commission.

The effect of the foregoing proposition is to reject as unavailable (as of the dates in ques-

[1] Notice to zoologists (especially to ichthyologists) of Consideration of Suspension of Rules of Nomenclature in cases of Gronow (1763), Commerson (MS. names—quoted in footnotes in Lacépède, 1803 mostly), Gesellschaft Schauplatz (1775 to 1781), Catesby (1771 reprint by Edwards), Browne (1789), and Valmont de Bomare (1768 to 1775).