

applies as well to species in which the female is the heterozygous sex as to those in which the male is heterozygous. The author does not hesitate to locate these factors in the chromosomes (though only one of them is in the X-chromosomes), and he is at considerable pains to show how this representation may be in harmony with the facts regarding several well-known cases of sex-limited inheritance. Crossing over (Morgan) is a modification of the regular process, but in no wise a contradiction.

Chapter XIII. is largely new. It relates to polymery, interference of genetic factors, sterility of hybrids and coupling of factors. Breeders, especially in Germany, come in for some sharp criticism for not adopting Mendelian methods and terminology. Inheritance in man is discussed in the final chapter of the book, which is new, and an extensive list of literature appearing from 1911 to 1913 is added to the old bibliography.

Numerous other changes, both additions and emendations, are made elsewhere. Many of these are made for pedagogical reasons. Some are of interest as indicating possible changes of the author's opinion. Thus, the author is now more inclined than formerly to regard the mutability of *Oenothera lamarckiana* as due to the hybridity of that species. He now leans more to the "Presence and Absence" theory of Bateson as representing the real truth. The chapter on inheritance of acquired characters is clarified, but the author's views are apparently little changed.

In a growing subject a book can scarcely be without errors. Thus, the four armadillo embryos of a litter are still referred to the first four blastomeres of the egg, whereas the reasons for so regarding them seem to have disappeared in the work of Patterson.<sup>2</sup> Typographical errors are few. Unfortunately, several of these have crept into the illustrations, but attention is directed to them in the legend.

The book is so good, however, that one can overlook its few faults. The new edition is plainly an improvement over the old. One

<sup>2</sup> Patterson, J. T., *Jour. Morph.*, Vol. 24, No. 4, 1913, pp. 559-662.

could wish it were to be translated into English for the benefit of the American students who will not read it in the original.

A. FRANKLIN SHULL

*Solvents, Oils, Gums, Waxes and Allied Substances.* By FREDERIC S. HYDE, S.B. Consulting Chemist, New York. New York, Van Nostrand. 1913. Price \$2.00.

These notes are for the use of factory chemists who wish a book on the subjects named which shall be condensed and authoritative.

The title suggests one of the good features of the book, that which gives the solvents for many of the substances mentioned; besides this, however, methods are given for the analysis of these compounds. In attempting to cover such a wide field it is not surprising that inaccuracies have crept in. For example, the statement regarding the Maumené-Sherman test (with sulphuric acid) is in error, as no dilution of the oil is necessary when using the ninety per cent. acid. The general unreliability of the Valenta test is not clearly stated. It is to be regretted that the "saponification equivalent" is again revived as it is infrequently met with at present. It should be noted that the New York State Tester is not commonly used for the ordinary lubricating oil—the Cleveland Cup is the one commonly employed. In the analysis of paints no reference is made to the use of the convenient centrifuge.

The book is one which will be very useful to all having to do with these substances.

A. H. GILL

#### SPECIAL ARTICLES

##### ADAPTATION OF THE TAMARISK FOR DRY LANDS

ALTHOUGH a specialist in the line of cereal investigations, the writer has had occasion during the past ten years, in connection with grain experiments in dry-farming in the Great Plains and Western States, to observe the comparative adaptation to conditions of drought of various orchard and forest trees. While certain trees, such as the black and honey locusts, the elm, Osage orange, hack-