Recently this difficulty of finding the description of figures in the text was brought home to me strongly in making use of a French morphological memoir with over 300 pages of text and 32 plates. No page references were given in the description of plates and there was no alphabetical index. As I was fortunate enough to possess a copy of the work, it was possible to note the necessary page references on the plates as ascertained by carefully going through the text, but it was a great labor. All this would have been saved and the memoir much improved by simply adding page references in the description of plates.

In doing such work, one may not succeed in finding the description of a given figure. That leaves a student in a quandary. It might be thought, and usually correctly so, that if there is a figure on a plate it is sure to be considered somewhere in the text. On the other hand, I know an author who published many figures that certainly are not considered in the text. To hunt for a description of a figure in the text and not find it, then feel that one must have overlooked it and hunt again, perhaps without avail, but surely with loss of time and vexation of spirit, is most trying. The author of a memoir is in a position to add page references in description of plates with comparatively little trouble, and with an immense gain to the reader. The cost of such insertions is so trifling as to be negligible. Of course it should be borne in mind that in the preparation of manuscript one should write: page, or p. 000, so that space will be available for the printer to insert the required page numbers.

In some publications page references are given in descriptions of plates; as such may be mentioned those of the New York State Museum, the paleontological publications of the United States Geological Survey, and largely in the well-known Challenger Reports. In using such publications it is immediately felt what a convenience and comfort it is to be able to turn directly to the indicated descriptive page without the labor of hunting for the same.

I adopted the method of giving page references in descriptions of plates in my first considerable paper, published some forty years ago, and have employed the same method in what few large papers I have since published with one exception, in which the editor refused to allow page references as they did not accord with the system adopted in that publication. He apparently felt that adherence to system was of more importance than the convenience of the reader.

It appears that there is every argument in favor of giving page references in descriptions of plates, and no argument against it, excepting in so far as the trouble to the author may be considered an objection.

It is highly desirable to have the descriptions of plates facing the plates, but as it costs more, it is not always feasible. When descriptions are printed so as to face the plates, it seems that it would be very desirable to give such descriptions page numbers, as is done in some publications. The main object of this is that a subsequent writer who may wish to refer to them may do so by quoting the *page number,* rather than by the alternative of *page facing plate blank,* which is somewhat lengthy and cumbersome.

Another point that is worth consideration is that in an index to a publication, when an item has references to two or more pages in the text, it is of convenience to have the principal reference indicated by heavy-faced type. Such a method, where adopted, facilitates the finding of the principal reference.

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CYTOPLASMIC INHERITANCE OF MALE STERILITY IN ZEA MAYS

WHEN the transmission of a character has been conclusively proved to be independent of nuclear factors it must necessarily be inherited through the cytoplasm. Such a mode of inheritance is called cytoplasmic in contrast to the better understood Mendelian inheritance. The few cases of cytoplasmic inheritance that have been clearly established are concerned with certain chlorophyll characters in plants in which the nature of the cytoplasm or plastids contributed by the maternal parent or, more rarely, by either parent, determines whether the progeny shall be green or abnormal (white, pale green, or variegated). There is at least one case (in flax) where the interaction of specific genes with the cytoplasm of one of the parental types results in male sterility; this can not be considered as purely cytoplasmic inheritance, since nuclear factors are also involved.

Recently, investigations of the inheritance of a male sterile line of maize found in a collection made by R. A. Emerson and F. D. Richey at Arequipa, Peru, indicate that the sterility is determined entirely by the non-nuclear elements of the maternal gamete. The cross of the original male sterile plant by an unrelated normal gave an F_1 of 45 sterile individuals. The F_2 cultures consisted of families which bred true for male sterility, and of others that gave normal-appearing individuals in addition to sterile plants. Races in later generations have been established which (1) breed true for male sterility, (2) throw male sterile and normal plants, and rarely (3) are completely normal. There is no female sterility apparent.

The analyses made permit the following statements concerning the inheritance of the male sterile character:

1. Replacement of the original chromosomes in the

male-sterile line with chromosomes from normal lines has no effect on the sterility. Through the use of Mendelian markers (genes) it was possible to show that 9 of the 10 linkage groups were free from any factor or factors causing the sterility. Tests are incomplete for the tenth group.

2. Pollen from partially sterile plants carry no transmissible factors, either genic or cytoplasmic, for male-sterility.

3. The genetic constitution of the male parent crossed with a male sterile individual has no demonstrable effect on the degree of sterility.

4. Cytological investigation shows the meiotic divisions in microsporogenesis to be normal. The degeneration of the pollen occurs usually after the first vegetative division.

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TREES WITH TWISTED BARK

IN SCIENCE for February 13 there is an article[1] by Mr. C. K. Wentworth on "Twist in the Grain of Coniferous Trees." Mr. Wentworth points out that the bark of conifers often shows a decided twist, and that in the cases of several hundred trees which he has examined the twist is usually right-handed. He adds that he has not noticed any similar twist in deciduous trees, but supposes it may perhaps occur.

These statements have recalled to me a twist which I noticed some years ago in the barks of maples and elms. I supposed that if the effect were at all common it was probably well known to botanists. However inquiry from two botanists did not indicate that either of them happened to know of it, and in connection with Mr. Wentworth's paper I am venturing to report my observations.

The number of trees which I have observed is small, and all of them are in the city of Northampton, Massachusetts. The maples often show a rather pronounced twist in the bark, and this twist seems to be almost always right-handed. On elms a twisted bark seems to occur less frequently, but when it does occur it is usually left-handed. In one location there are two large elms with strong left-handed twist growing near to a large maple that has a strong right-handed twist.

The number of trees which I have observed is too small to permit of drawing any general conclusions, but in this small number the twist seems to be more frequent in maples than in elms, and seems to be usually right-handed in maples and left-handed in elms.

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[1] Chester K. Wentworth, SCIENCE, 73, 192, 1931.

PANAMAN OR PANAMANIAN?

IN numerous journals, including SCIENCE, and in the press, the use of the adjectival form, Panamanian, has been noted. The proper noun, Panama, does not seem to differ in any essential way from the many other proper names, geographic and personal, which end in "a."

The well-nigh universal practice in forming the adjective from such nouns is the simple addition of a final "n." Thus African and American instead of Africanian and Americanian. Other common examples of such words are: Alabama, Atlanta, Asia, Australia, California, Caligula, Dominica, Florida, Guatemala, Inca, Iowa, Korea, Maya, Montana, Nebraska, Nicaragua, Olympia, Peoria, Persia, Polynesia, Russia, Seneca, Utica, Utopia, and Volga, and most of the rest of the long roll. For these we write, in the adjective form, Albertan, Incan, Mayan, Nebraskan, Polynesian, Utican, etc., but never the double suffix, as Iowanian, Mayanian or Nebraskanian. Therefore, why Panamanian instead of Panaman?

There are some exceptions to the general rule, of course. It would not be our English language if there were not. Canada becomes Canadian and Carolina is transformed to Carolinian, probably partly from ideas as to euphony and partly from resemblance to those adjectives formed by adding "n" to a final "ia," as, Asia: Asian. But, even so, one never sees Canadanian or Carolinanian, which are exact counter-parts of Panamanian.

Another exception is China, although there is nothing wrong with Chinan except its unaccustomedness —and one never meets with Chinanian. Let us make it unanimous for Panaman!

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ESTRUS

THERE has been recently some discussion in your columns on the right use of Greek and Latin case endings in scientific nomenclature. May I draw to your attention the misuse of the word "Estrus" which has crept into the literature. This word was introduced by Heape to denote the period of sexual desire in the female and was correctly spelt by him "Œstrus," but many writers prefer the form "Estrum." It is inconceivable that the gadfly which chased the sprightly heifer, Io, into Egypt could have been anything but masculine, so this form must be, not the neuter gender but the accusative case, which is undefendable. The adjectival form "estrous" is often badly distorted too. The modifications "postestrum," "metestrum," "diestrum" and "anestrum" are