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.

MARCUS M. RHOADES

CORNELL UNIVERSITY

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.

ARTHUR TABER JONES

SMITH COLLEGE

[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!

CARLETON R. BALL

UNIVERSITY OF CALIFORNIA

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