

There would appear likewise no reason to assume that a so-called neurotropic strain exists, but that in syphilis of the nervous system the different forms of the *Treponema pallidum* may be encountered.

2 (1180)

**A sex-intergrade strain of Cladocera.**

By **ARTHUR M. BANTA.**

[*From the Station for Experimental Evolution, Cold Spring Harbor, Long Island, N. Y.*]

The above-mentioned strain appeared about a year ago. For four years the writer had been breeding a number of strains of *Simocephalus vetulus*. For 130 generations reproduction was entirely parthenogenetic. The young were all females, there being neither males nor sexual eggs. In the 131st generation of one of the eleven strains of the species reared under laboratory conditions for so long there suddenly appeared, in addition to normal females, males and *sex intergrades* of many sorts. This strain has continued to produce sex intergrades for a year—more than twenty generations—and the character of the intergrades produced does not seem different now from what it was when the sex intergrades first appeared.

In this species, in addition to the character of the gonads, eight morphological secondary sex characters are recognized. In the sex-intergrade strain the sex array may be roughly classified into normal females, female intergrades, hermaphrodites with various combinations of male and female secondary sex characters, male intergrades, and normal males.

The female intergrades range from females with a single, perhaps poorly developed, male secondary character to those with all the secondary sex characters male. The hermaphrodites have various combinations of male and female secondary characters. There are male intergrades with as many as five secondary sex characters, though ordinarily the male intergrades have only one or two female characters.

The male intergrades usually have incompletely developed reproductive organs. Sperm is produced in various amounts.

The amount is usually smallest in the male intergrade with the larger number of female characters; and usually males with a single female secondary sex character produce fewer sperm than normal males. The female intergrades with one or two male secondary sex characters usually possess a high fertility, those with as many as four or five male characters are in general much less prolific, while those with six or more male characters are usually sterile or nearly so. The hermaphrodites are frequently sterile, though some are moderately prolific. The normal females within the sex-intergrade strain produce representatives of the entire sex array. In general however the female intergrades with several male secondary characters produce a higher percentage of males and male intergrades than either the normal females or the female intergrades with few male characters.

Sex here appears as a purely relative thing. There occurs practically every gradation from the entirely normal female with a full complement of female secondary sex characters; through female intergrades of all sorts; hermaphrodites, with various combinations of secondary sex characters; and male intergrades of various rank; to normal males with all the primary and secondary sex characters distinctly and strongly male.

### 3 (1181)

#### **Cardio-respiratory involvement in infantile scurvy.**

By **ALFRED F. HESS, M.D.**

*[From the Board of Health Laboratories, New York City.]*

Infantile scurvy is commonly regarded as a disorder which affects the blood vessels and the bones. In previous communications it has been shown that this view is too narrow, that the heart is frequently enlarged, the deep reflexes exaggerated, and that there may be changes in optic discs. In the present communication we wish to point out that even in moderate instances of infantile scurvy, there may be found marked polypnea and tachycardia. The accompanying chart illustrates this condition and demonstrates likewise its scorbutic nature by the promptness with which it reacts to antiscorbutic diet, to orange juice or to potato.