

Manoilow's technique to some additional organisms, or have attempted to reduce the complicated reaction evolved by Manoilow to a simpler one. In the second place, Manoilow worked for some years on the serum of "cows and oxen, horses, cocks and hens," as well as man, before he published (*Wrachebnaia Gazeta (Medical Journal)*, 15, 21-22; 1923) the earlier accounts of his work on the identification of sex in man and other animals by a biological reaction of the blood.

In discussing the results of applying his test, Manoilow shows that although in some categories of individuals—as those furnishing samples of blood from venereal clinics—he was able to determine sex accurately in 100 per cent. of cases, in others the percentage of accurate determinations was less than 100, but in the latter instances the degree of accuracy is high, and mostly significant. It is clear, therefore, that Manoilow has discovered a series of phenomena of fundamental importance in the study of sex, whether his test be infallible or not. The word discovery is used advisedly, because the problem was attacked deliberately. Whether this reaction be found eventually to define particular sex-attributes or sex-products, or only a particular metabolic condition closely associated with sex, we are indebted to Manoilow for opening up this avenue of research, the vista of which beckons with the promise of great results in the future.

Now the reaction as evolved by Manoilow is not only delicate, as Perkins points out, but also intricate, and it is doubtful whether any worker would attain to the original researcher's standard of success in its use, without both meticulous attention to the detail of the test, and considerable experience in applying it. It is the object of the account mentioned above to present to English workers full details of the test.

At about the time Manoilow succeeded with his test for sex, it was suggested independently in *NATURE* (vol. 111, p. 879; 1923) that a chemical test for sex might be found to be possible in invertebrates, because of the common occurrence of a difference in colour of the pigments in the gonad of males and females of the same species. Thus the underlying idea of this suggestion was not that a universal test might be found for sex, but rather that specific chemical tests might be devised for differentiating sex in given species. It would seem that the basis of this latter idea might be usefully incorporated in the evolution of the Manoilow and similar tests. It is possible that a slight variation in the technique of the reaction in each species might give constant differential results correlated with the two pure positive sex-conditions, for the primary object of the test is the infallible determination of pure males and pure females.

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Parental Care in the Cichlid Fishes of the Victoria Nyanza.

ACCORDING to various natives from different places on the shore of the Victoria Nyanza, many of the lake fishes (all except the silurids, according to one fisherman) carry their fry in their mouths. One variation of the story makes the eggs pass internally from the ovary to the pharynx: in another the eggs or fry are gathered up from the nest in case of danger.

The account was received with almost the same caution accorded to the story of the monstrous serpent of the lake, but it has been found to apply to several cichlids.

Eggs have been found in the mouths of *Haplochromis macrodon* (at Kisumu from a small native papyrus seine on Aug. 17) and *H. nubilus* (at Bukoba from a cast-net on Sept. 7). Newly hatched young were found in the mouth of one specimen of *H. nubilus* taken in a cast-net at Bukoba on Sept. 6. Two specimens each with young advanced beyond the stage of complete absorption of the yolk-sac were taken in the same manner on Sept. 6 and 7. One *Tilapia variabilis* taken from a large native papyrus seine at the mouth of the Kibos River near Kisumu on Aug. 14 had young in its mouth with the yolk-sac almost completely absorbed. Advanced young were taken from *H. crassilabris* at Kisumu on Aug. 17.

One haul with a seine on Rusinga Island at the mouth of the Kavirondo Gulf on Sept. 1 yielded 19 cichlids. Seven of these had eggs or young in their mouths. These were placed in an aquarium, and included various stages from eggs which hatched within an hour to young in which the yolk-sac was completely absorbed. The seven fish were: one *Macropodus bicolor*, five *Haplochromis nubilus*, and one *H. ishmaeli*.

On Aug. 24 one *H. ishmaeli* was kept alive of two taken with young in the mouth. This fish and its fry were placed in an aquarium, and towards evening it was observed that the fry had gathered up into a fairly dense shoal near the parent's mouth and their apparent number had decreased. Parent and fry died shortly afterwards.

In all cases the parent concerned was the female.

The *Tilapia* parent and young were kept in a vessel for one week. Although the fish was not supplied with food, the young were not eaten, which is not in keeping with a theory that the fish taken with small fish in the mouth were caught in the act of eating them.

In several cases the mouth of the mother was packed quite full of eggs or young, so that the soft part of the lower jaw was noticeably distended.

The nomenclature used herein is after Tate Regan (*Proc. Zoo. Soc.*, 1922).

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Fishing Survey of Lake Victoria,
Kisumu, Kenya Colony,
Sept. 16.

Application of the Interference Method to the Determination of the Surface Area of Metallic Nickel Films.

WITH the quantitative establishment of the interference theory of the production of colours on metallic copper (*Proc. Roy. Soc.*, A, vol. 115, p. 570; 1927) and its application to the study of the sintering of reduced copper films by heat treatment (*Jour. Chem. Soc.*, July, p. 1597; 1927) the behaviour of nickel films becomes of increasing interest. Spectrophotometric observations on the growth of oxide films on nickel showed again that interference was the primary cause of the colours developed during oxidation, and hence the same method is applicable to the study of nickel films. Moreover, the dispersion shown by nickelous oxide is very much smaller than that shown by copper oxide.

Taking advantage of the indifference of metallic nickel to carbon at low temperatures (Ni_3C seems to be formed at 2100°C ., but rapidly dissociates at lower temperatures) the nickel was electrolytically deposited on china clay coated with graphite. The nickel film was activated by oxidation in air and reduction by hydrogen at 520°C ., and the conductivity of the film was plotted against the equivalent air thickness corresponding to the colour shown