

## SCIENCE:

A WEEKLY NEWSPAPER OF ALL THE ARTS AND SCIENCES.

PUBLISHED BY

N. D. C. HODGES,

874 BROADWAY, NEW YORK.

SUBSCRIPTIONS.—United States and Canada.....\$3.50 a year.  
Great Britain and Europe..... 4.50 a year.

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## CURRENT NOTES ON ANTHROPOLOGY. — III.

[Edited by D. G. Brinton, M.D., LL.D.]

## An International Anthropometric Scheme.

DR. R. COLLIGNON of the French Army is well known as one of the most active students of anthropology in France. His researches on the tribes of North Africa are classical. He has just issued a "Projet d'Entente Internationale pour arrêter un Programme commun de Recherches Anthropologiques," which should attract the earnest attention and co-operation of followers of this science the world over.

Without entering into the other details of his plan, those relating to the actual measurements desired may be here stated. In all cases there should be noted the height, the color of the eyes, as either light, dark, or intermediary; color of the hair, as either red, blond, intermediate, brown, or black; line of the nose, as either convex, straight, or concave. In addition to these, on forty subjects, the two factors of the nasal index should be carefully noted; finally, on twenty of these the following head measurements: maximum antero-posterior diameter, maximum transverse diameter, maximum bizygomatic diameter, total height of head.

Of course, the value of such statistics for comparison will depend a good deal on the operative methods employed. Dr. Collignon explains these with great care; and I would urge all who would like to aid in this admirable project for international scientific work to address him for particulars, as follows, Dr. Collignon, 42 Rue de la Paix, Cherbourg (manche), France.

## Embryonic Causes of Variations in Vertebrates.

The fundamental question in anthropology is that of the causes which have led to the differences in the races of men. Hitherto most writers have been content with surface generalizations about "environment" and "heredity." The disciples of Spencer have rung the changes on these with little positive profit. We have no knowledge what heredity really

is, and "environment" has borne more than its share of causality.

A real step in advance has been taken by Dr. Dareste, in his work on "Teratogeny," or the artificial production of monsters. He shows conclusively that monsters or monstrosities are not the result of pathological changes in the embryo, as has hitherto been supposed, but are modifications of the processes of organic evolution, precisely analogous to those which bring about the differences which distinguish individuals and races in mankind. This can be proved experimentally in oviparous animals, the domestic fowl, for instance. By developing the chick in an artificial incubator and subjecting the egg to unusual conditions, such as shaking it from time to time, varnishing it, exposing it to rapid changes of temperature, etc., we can produce monstrosities in all points analogous to those in man.

The changes take place in the earliest epochs of embryonic life and are in two directions: 1, arrest of development; 2, union of homologous parts. The former assures the permanence of an embryonic condition, the latter produces the phenomenon of double monsters. By tracing the conditions which yield these exaggerations, we may distinctly perceive the causes of many of the physical peculiarities of man.

## Application of Psychological Research to Anthropology.

Experimental psychology is a comparatively new realm of research, and we may confidently expect from it most valuable aid in defining the differences between the races of men. Its main object may be said to be the measurement of the relative rapidity, intensity, and persistence of mental actions. This means that it endeavors to discover material gauges and mathematical formulas for the sensory, motor, and intellectual processes. Think what this involves! Nothing less than that we shall be able to measure the mental abilities of a man as we do his height and girth!

Though this goal is probably theoretical, as the individual generally eludes averages, these are true for the mass, and we may be sure that a series of observations on, say twenty, pure adult types of the several races would yield results markedly different and highly significant. The points to be examined are such as these: the rate of muscular movement, rapidity of nervous impulse, transmission of motor and sensory stimuli, race-differences in reaction-times, sensation-areas, differences in estimating weights, judgment of the passage of time, sensibility to pain, the rate of forgetting, etc. With the excellent psychological laboratories now in operation at several of our leading universities, these comparative observations could readily be made, and they certainly promise most important results.

## Curious Testimony to the Value of the Nasal Index.

In 1882 the British Government began an ethnographic and anthropometric inquiry into the native races of India. The results, which are now nearly ready for publication, will fill four bulky volumes, and will contain a mass of most valuable material for the study of these interesting peoples. A glimpse of some of them is presented in an article in the last volume of the *Journal of the Anthropological Institute*, by Mr. H. H. Risley of the Bengal Civil Service. One of the most noteworthy is the conclusion that there are really no physical differences between the Kols and the Dravidian tribes, in spite of the radical diversity of their languages. Neither of them discloses any Mongoloid affinities, though a number of tribes in northern and eastern Bengal are clearly akin to that great Asian race.