

evidence must necessarily be, if compared with the examination of the brain itself, nevertheless the number of skulls of the different races gauged unquestionably furnishes some highly valuable data for ethnical comparison. The evidence, moreover, is obtained from a source in some respects less variable than the encephalon ; and will always constitute a corrective element in estimating results based on direct examinations of the brain. Dr. Davis, indeed, claims "that the examination of a large series of skulls in ascertaining their capacities and deducing from those capacities the average volume of the brain, affords in some respects more available data for determining this relative volume for any particular race than the weighing of the brain itself." The defect is, that its most important results are necessarily based on the assumption of a uniform density of brain ; whereas some notable ethnical differences, hereafter referred to, may prove to be due to the fact that certain races derive their special characteristics from a prevailing diversity in this very respect.

But the extensive observations of Dr. Davis, as of Dr. Morton, have a special value from the fact that each furnishes results based on a uniform system of observation ; for the diverse methods and materials employed by different observers in gauging the human skull have greatly detracted from their practical value. In a communication by the late Professor Jeffreys Wyman to the Boston Natural History Society,* he presented the results of a series of measurements of the internal capacity of the same skull with pease, beans, rice, flax-seed, shot, and coarse and fine sand. From repeated experiments he arrived at the conclusion that the apparent capacity varied according to the different substances used, so that the same skull measured respectively, with pease 1193 centimetres, with shot 1201·8, with rice 1220·2, and with fine sand 1313 centimetres. Professor Wyman was led to the conclusion that, for exactness, small shot, as employed latterly by Dr. Morton, is preferable to sand, were it not for its weight, which, in the case of old and fragile skulls, is apt to be destructive to them. With a view to avoid the latter evil, Dr. J. B. Davis has used fine Calais sand of 1·425 specific gravity. The diversity in apparent volume, consequent on the employment of different substances in gauging the internal capacity of the skull, necessarily detracts from the value of comparative results of Morton, Davis, and others. But the elaborate measurements of their great collections

* "Proceedings of the Boston Natural History Society," Vol. XL.