This review has summarized some of the more recent test findings which show that comparative studies of various national and racial groups may not be made with existing tests, and which show, in particular, that one of the most pretentious of these comparative racial studies—the writer's own—was without foundation (p. 165).

In his survey[5] of the information available on the question of racial differences, Professor Klineberg clearly indicates the artificial character of the "facts" of racial difference, and states that "the conclusion came first, and the 'facts' were found to justify it" (p. 344).

In the recent studies of race differences in which careful attempts have been made to control some of the non-racial variables affecting performance, as well as in the best conducted of the earlier studies, the purported differences in performance as among races have not been demonstrated with any degree of clarity. In summary, it can be said that, so far as the psychological evidence is concerned, on the one hand there has been no clear demonstration of facts which are unequivocably interpretable as evidence for the existence of racial differences, while on the other hand there does exist a growing body of evidence which indicates that as cultural factors are controlled the obtained differences in psychological characteristics as among races tend to diminish to the point of insignificance.

HERBERT G. BIRCH

REGENERATION OF ADULT MAMMALIAN SKELETAL MUSCLE IN VITRO[1]

IN the course of an *in vitro* study of normal synovium from the patellar region of an adult rat, we have noted the appearance, growth and spontaneous contraction of striated muscle fibers from the muscle component of the explants.

On the 14th and 15th days of culture, muscle fibers were noted in two cultures; on the 16th day, the fibers began to contract spontaneously; and on the 18th day, the fibers still contracting, cross striations were observed. A portion of the explant also contracted rhythmically and spontaneously. These cultures were kept for six days more, during which time they were washed and fed about three times. The fibers increased in number and length. During this period they retained the capacity to contract spontaneously and rhythmically, at different rates and intervals. One fiber with no connection to the explant was also seen contracting. The contraction was most vigorous and involved the greatest number of fibers immediately after washing and feeding. Often there was a period of relatively rapid rhythmic contraction followed by a period of inactivity, after which contraction was resumed.

The outgrowing muscle fibers were ribbon-like structures with nuclei occurring singly, doubly, or in threes, fours or fives along their length. Longitudinal striae could be seen in the ribbons. Cross striae were elusive in nature, appearing, disappearing and reappearing. The majority of fibers showed no cross striae throughout their length even when contracting.

The muscle fibers are similar in structure and behavior to those of rat embryos (intercostal region) grown in this laboratory. In both cases the Maximow method was used, *i.e.*, a flying coverslip upon which the cells grew undisturbed except when being washed and fed. The only differences observed were that the embryonic muscle fibers were broader and had a greater number of nuclei. Longitudinal striae could be seen; cross striae were elusive, as in the case of the adult fibers. The muscle fibers in the embryo began to contract spontaneously at between four and eight days. One culture retained its capacity to contract for over a month.

In summary: Striated muscle from adult rat was seen to regenerate and to contract spontaneously *in vitro;* in appearance and behavior these fibers were similar to embryonic rat striated muscle fibers cultivated by the same method.

Since innervation of any sort is eliminated, this capacity of skeletal muscle to fibrillate *in vitro* offers a method for further analysis of contractility.

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ORTHOGRAPHY OF SCIENTIFIC NAMES

THE recent article by Dr. Harold Kirby[1] is a fine summary of the complex problem of transcription and orthography in scientific nomenclature. It omits one point which has had considerable importance in the past and continues to plague systematists. Transliteration has a strong nationalistic flavor. Many authors have been concerned to produce a version of the Greek or Latin term which looked French, Italian or German, etc. The real problem is: Are we rendering letters or sounds? Actually we compromise the matter by doing sometimes one and sometimes the other. This difference is illustrated by the official Russian and Library of Congress systems of transliterating Russian. The first conveys the spelling in Roman without helping a Western European to pronounce the word, while the latter gives the pronunciation but no idea of the Cyrillic spelling.

To look at some of Dr. Kirby's examples: *Agchylostoma* gives the Greek spelling but not the sound,

[5] Otto Klineberg, "Race Differences," Harper and Brothers, N. Y., 1935.

[1] From the Department of Surgery of the Presbyterian Hospital, and the Laboratory of Surgical Pathology, Columbia University, New York, N. Y.

[1] SCIENCE, 100: 425–427, 1944.