not employed by an instrument manufacturer. Two themes are specified: instruments save money; instrumentation makes jobs. The contestant is to submit either an original report or an original essay in support of either theme. No manuscript should cover both themes. The contest will be judged by the following Jury of Award: M. F. Behar, editor, *Instruments;* C. S. Redding, president, Leeds and Northrup Company; H. B. Richmond, treasurer, General Radio Company; P. T. Sprague, president, The Hays Corporation, and chairman, Industrial Instrument Section S. A. M. A; L. G. Wilson, president, Precision Thermometer and Instrument Company; F. K. Taylor, vice-president, Taylor Instrument Company; Clemann Withers, treasurer, Sperry Gyroscope Company. The contest closes on November 15, 1939, and the judging will be held promptly. Copies of the rules of the contest and of the official entry forms can be obtained from the Scientific Apparatus Makers of America, 20 North Wacker Drive, R.3014, Chicago, Ill.

THE twelfth annual Science and Engineering Fair of the American Institute of the City of New York will be held in 1940 from April 14 to 20, inclusive. Ten thousand students of science are members of the institute. All exhibits are the actual creations of the student participants, and cash prizes amounting to more than two thousand dollars will be awarded for the best displays. Working models, experiments, live animals and plants, technical and mechanical projects and miniatures are but few of the types of exhibits which have been designed and executed for this year's fair. It is the annual fair of New York County, a continuance of the annual industrial fairs of the institute which began in 1828.

THE United States Sugar Corporation at Clewiston, Fla., has made a gift of $1,000 to establish the Napoleon B. Bernard Fellowship for research at the University of Florida. This marks the fourth gift by that organization to the university since 1937, the others being a similar $1,000 fellowship and two $2,000 scholarships. The new fellowship provides awards for "graduate study of the soil, climate and agriculture of the Everglades."

DEARBORN OBSERVATORY of Northwestern University is being moved 600 feet south and east to clear the site for the erection of the new Technological Institute. Under the direction of Dr. Oliver J. Lee, chairman of the department, astronomers at the university have stored the telescope lenses in underground vaults, lashed the telescope to the walls and moved the most delicate instruments out of the building. The 125-ton brick pier on which the telescope rests will be moved with the building. Using 700 jacks, each of 25-ton capacity, the entire structure has been raised about three feet, placed on rollers, and is being taken away on tracks, using two teams of horses and a tractor. Test borings indicate tha the new site of the observatory is directly over an old creek bed, which will give the building a firm foundation on a dense clay substratum.

DISCUSSION

THE ORIGIN OF THE HUMAN RACES

MANKIND may be divided into a number of races and, whereas various authors have different opinions about the question as to how many races there are, they are fairly unanimous in considering them to be the products of some natural force or forces. Presumably agencies similar to those responsible for the production of groups of nearly related species would be the cause of the human races.

It is a well-known fact that members of different races in all possible combinations may have fertile offspring. Therefore, there must be isolating factors which keep the races separated, as otherwise mankind would be a thorough mixture of a great many types, such as observed when studying a population, said to be of one race.

These isolating factors are thought to be natural, as opposed to human, in the same sense in which a house may be called a human and not a natural product, although in the last instance man, and all that which belongs to him, is part of nature. Here, in my opinion, a grave mistake is made. The human races are not maintained by an act of nature, but by human, that is, social, discrimination.

Proof for this lies in the nature of the qualities by which the races differ. They are all superficial and readily impress an untrained observer. The color of the skin, the shape of the eye or nose, the form of the hair which constitute the basis for the recognition of human races are visible to every one at the first glance and may therefore be subject to social selection. This causes their occurrence in large coherent sections of the human population.

The variations upon which the human races are based are by no means the only ones existing. Professor Komai has published a list of more than 80 inheritable variations common to the white race and the Japanese, although not occurring with the same frequency. Some of these, like color blindness, the presence of supernumerary fingers or toes and harelip are unobtrusive and free from social taboo. Others, like the blood groups, refer to inner organs or chemical substances and are invisible as such. None of

them could serve as basis for the distinction of a human race. There are color-blind people among all races, but there is no race of color-blind men, because without a scientific investigation no one is able to select his mate in regard to this quality.

The human races, such as they are, would never have developed in nature in the absence of man's own social actions, the results of which are not restricted to the differentiation between the major races of mankind. Differences between tribes, some of them counting only a few hundred individuals, are due to the same cause.

The races of mankind are no less a product of man than the races of his dogs and horses. Here, too, a certain potential variability is a prerequisite for the creation of a number of races. In the case of the dog this must have been present in the wolf and the other wild species of carnivores which went into the crosses from which the various types of dogs were bred. This original variability is natural and not due to human action, but it need not show and may lie hidden in a comparatively uniform animal like the wolf.

The origin of this primary variability need not be discussed at present and is, as yet, uncertain. Only, it may be stated that the natural forces responsible for this variation have not necessarily long ago ceased to be active. There is reason to believe, for instance, that in man the character which is designated as blood group *A* has originated only a few thousand years ago.

Whatever the nature of this primary variability it does not lead to a distinction between races, if not accompanied by isolation of the various types in one way or another. Many recognize various environmental factors, as, for instance, the climate, as such isolating agencies. The various climates, it is said, would produce the human races. However, it is not clear why the climate would only affect the dispersal on earth of visible characters and not that of the more numerous characters which are more or less invisible.

Each of the human races, if inhabiting the earth alone, might spread over a somewhat different area, and factors like climate, or physical barriers obstructing migration, may have something to do with the segregation of mankind into groups with different types. But the social motives in regard to mate selection are much stronger than any motive to select a certain climate or other environmental condition. Generally speaking, members of the white race are willing to live all over the earth, but not to marry into other races.

If the idea discussed above is correct the problem of the human races is one to be more studied by sociologists than by biologists. It also gives hope that race differences will be viewed with less superstition and that race problems will be recognized as being more amenable to humane solutions than they appear to many at present.

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THE FLOATING POPULATION OF THE AIR

IN my recent studies of the biota of the islands off the coast of Southern California I have found that the endemic insects appear to be mainly confined to certain groups, especially the more or less bulky Tenebrionid beetles, which can not fly. Excluding the species certainly or probably introduced by man, there is still a very large population of flying insects, as well as spiders, quite identical with species of the mainland. It might at first appear that these species were very constant in their characters, with little tendency to form distinct races or species when isolated. The true explanation, however, appears to be that they are constantly arriving through the air. The floating population of the air has not been sufficiently understood in the past, but the essential facts are admirably presented by Mr. P. A. Glick in his recently published work on "The Distribution of Insects, Spiders and Mites in the Air" (U. S. Department of Agriculture, Technical Bulletin 673, May, 1939). In this paper full details are given of the collections made by aeroplane in Louisiana and Durango, Mexico, the specimens secured having been carefully sorted and so far as possible identified. The work at Tallulah, Louisiana, involved 1,314 aeroplane flights, during which the insect traps were in operation for 1,007 hours. There were 44 flights in Durango, Mexico. In Louisiana, by day, 24,559 insects and arachnids were taken in 51,178 minutes. By night, 3,955 were taken in 6,790 minutes. Two hundred and twenty-five were taken in 2,455 minutes at altitudes over 5,000 feet; one spider at 15,000 feet. In Mexico, 1,294 specimens were taken in 2,120 minutes. There were numerous small wingless forms, carried upward by the air currents. All the various aspects of the work and its significance are most ably discussed by Mr. Glick, the bulletin extending to 150 pages. It is evident that the islands must be constantly receiving insects, spiders, and also spores and some seeds, through the air. Only a very small percentage of these can survive, but the constant supply enables the available environments to be populated, so that even recently introduced plants are often infested as they would be on the mainland. Thus at the Rancho Escondido, Sta. Catalina, I found the cocklebur, *Xanthium spinosum,* swarming with the trypetid fly which attacks it elsewhere. The introduced *Diaspis* scale of the prickly pear, at the same place, was infested by chalcidoid parasites. At the present time, the manner of arrival of the various species can only be guessed, but if the very numerous planes constantly flying about the islands could be utilized (with no in-