

## Research Items

### Physical Characters of the Cook Islanders

To a series of monographs on the physical characters of the native populations of Polynesia, Dr. H. L. Shapiro and Dr. P. H. Buck (Te Rangi Hiroa) have added a study of the Cook Islanders, based on material collected by Dr. Buck in 1926 and 1929 (*Mem. Bernice P. Bishop Museum*, 12, No. 1). The process of disintegration has not gone so far in Cook Islands as in other parts of Polynesia, and it is still possible to find there a representative example of true Polynesians. Although strictly speaking the Cook Islands are limited to six, three others, Manihiki, Rakahanga and Tongareva are included. Of the 913 individuals examined, a number were rejected as unsuitable, and the records here studied are derived from 804 individuals, of whom 551 are males and 253 females. Ten measurements and twenty observations were taken. The characteristic features show that the Cook Islanders are akin to other Polynesian groups. Tall, robust, and well developed, they show a typical tendency to brachycephaly, with a massive face and characteristic combination of broad bizygomatic diameters with high narrow foreheads. The nose is large and fleshy and the lips full. In complexion they are moderately brown-skinned with dark, straight, or wavy hair, which, though luxuriant on the head, is only sparsely developed on the body and face. The eyes are full and dark-brown, and the epicanthus is usually absent. The archipelagic uniformity which is characteristic of other parts of Polynesia, with one exception, is completely lacking here. The exception is the resemblance between Manihiki and Rakahanga. Certain characters, however, bind the islanders into a homogeneous group, while in others, such as nose height, face height, head length and span, the islanders are differentiated one from another. Two distinct types, however, can be established with several intergrades, the differences to be allotted to Central Western and Maori strains.

### Proficiency and Psychological Tests

REPORT No. 74 of the Industrial Health Research Board, by E. Farmer and E. G. Chambers, is a study of the prognostic value of some psychological tests. In all, 2,731 men from fourteen occupational groups were tested with a number of psychological tests, and the data were examined to see to what degree proficiency at the tests was related to proficiency at the different occupations. Statistical treatment of the results showed that the psychological tests given to adolescents did have prognostic value in the skilled groups, but that they were of no diagnostic value for proficiency in the unskilled groups. There was also no evidence to show that psychological tests can afford a measure of the factors involved in the proficiency of those already proficient. The report is extremely valuable, not only for its positive conclusions but also because it shows the very great complexity both of the processes involved in proficiency and in the interrelation of the various psychological functions. Vocational selection is an infinitely more difficult problem than some enthusiasts for testing realize.

### Birds of Bay Islands, Spanish Honduras

"LAS ISLAS DE LA BAHIA" form a chain of islands in the Caribbean Sea, off the north coast of Honduras. They are little known, and have a very limited fauna, land shells being particularly scarce. James Bond has described the resident birds of the islands, 43 species or subspecies, five of the latter being new to science (*Proc. Acad. Nat. Sci. Philadelphia*, 88, 353; 1936). The resident bird fauna is fundamentally of Central American type, and the island chain must be looked upon as the tops of a submerged mountain range, which through isolation from the mainland have retained a number of Central American species. These relict forms have entirely or almost disappeared from Central America proper, but they appear, again as relicts, on islands off the coast of Yucatan.

### Reproduction in the Chimpanzee

THERE are about twenty published records of the birth of chimpanzees in captivity, but in none of these cases has the whole process been described in the full detail which is given in a recent paper by J. H. Elder and R. M. Yerkes (*Proc. Roy. Soc., B*, 120, 409; 1936). This paper reports fifteen births (one of them twins) which have occurred during the last six years in the Yale Laboratories of Primate Biology. Fertilization, pregnancy, parturition and the puerperium are fully described. Impregnation occurs about, or slightly after, the midpoint of the 35-day sexual cycle. The average duration of pregnancy was 236 days—about 30 days shorter than in man. Menstrual bleeding does not commonly recur after conception. Almost without exception, the chimpanzee female during pregnancy and nursing is much more gentle, friendly, dependable and easily handled than at other times.

### Genetical Constitution of *Drosophila pseudo-obscura*

LIGHT is thrown on the relationships of species by a comparison of their mutations. Mr. H. P. Donald (*J. Genetics*, 33, No. 1) has investigated the forty-five known mutations of *Drosophila pseudo-obscura* in comparison with those of *D. melanogaster*, and gives revised linkage maps for its five pairs of chromosomes. A number of the mutants are similar to those of *D. melanogaster*; for example, the autosomal types bithorax, glass, stubble, pink, cross-veinless and jaunty, and the sex-linked mutations known as pointed (= beaded), yellow, scutellar, white, singed, vermilion and miniature. Linkage maps of the two species, connecting genes which are supposed to be homologous, indicate that various rearrangements of the genetic material have taken place, and that these have been intrachromosomal more frequently than interchromosomal. Considerable homology is indicated between corresponding chromosomes or whole arms of chromosomes in the two species. Despite a number of translocations involving changes in the positions of one or more genes, the loci involved appear to have retained largely the same phenotypic effects, variability and mutability as before.

### Radioactive Elements in Plants

THE continued interest in the relation of radioactivity to plant growth focuses attention on the paucity of information available as to the presence of radioactive elements in plants. K. Kunasheva and B. Brunowsky, of the Biogeochemical Laboratory of the Academy of Sciences at Moscow, who have already published work dealing with the presence of elements of the thorium series in duckweed, have reported in a letter to the Editor the results of quantitative determinations of uranium in the same species. They find the uranium content to be  $9.5 \times 10^{-5}$  per cent. By the same method the radium content was found to be  $2.38 \times 10^{-11}$  per cent. On the basis of these figures, the ratio Ra:U for duckweed is calculated as  $2.7 \times 10^{-7}$ , that is, within the limits of error in measurements, uranium is in equilibrium with radium. Details of the method and results of the measurements are to be published in a forthcoming issue of the *Proceedings of the Biogeochemical Laboratory of the Academy of Sciences*.

### A New Genus of Mesembryanthemum

The late Dr. N. E. Brown left a manuscript note of six species of shrubby South African mesembryanthemums. He included these in a new genus, *Mestoklema* (Gr. *Mestos*, full, *klema*, a small branch), and full descriptions of the species appear in the *Gardeners' Chronicle* of August 29. *Mestoklema* is allied to the older genus *Delosperma*, but differs in its peculiar branched habit, the very small flowers, the persistent, hardened, subspinose cymes, and the closed cells of the capsule, which are provided with cell wings.

### The South Sandwich Trench

To the north and east of the South Sandwich Islands in the South Atlantic on the edge of the Weddell Sea, the *Meteor*, and later *Discovery II*, took some unexpectedly deep soundings exceeding seven thousand metres. This area was further sounded in the most recent cruise of *Discovery II* and is provisionally mapped in a paper by Dr. N. A. Macintosh on "The Third Commission of the R.S.S. *Discovery II*" in the *Geographical Journal* of October. The trench seems to extend in an arc about a hundred miles to the east of the line of volcanic peaks which constitute the group of South Sandwich Islands. On the north it ends in about lat.  $55^{\circ}$  S., and in its northern part it is widest and deepest, falling to below eight thousand metres. To the south it narrows to a cleft of more than seven thousand metres, less than ten miles wide in its deepest parts. This remarkable cleft has not yet been traced south of about lat.  $61^{\circ}$  S., where it seems to curve towards the west, south of the ridge joining the South Sandwich and South Orkney Islands.

### 'Polaroid'

DEMONSTRATIONS of some technical uses of the new polarizing material 'Polaroid' are being given by appointment with Messrs. Polaroid Products, Ltd., 39 Lombard Street, E.C.3 (Telephone, Mansion House 2997). This firm is the representative agent in Great Britain of the American manufacturers of the polarizing film described by Prof. A. F. C. Pollard in *NATURE* of August 22 (p. 311) and now named the International Polaroid Corporation, New Jersey,

U.S.A., with its laboratories in Boston. The film, which formerly consisted of nitrocellulose, but now consists of the less inflammable cellulose acetate, contains sub-microscopic crystals of herapathite with their optic axes oriented in one direction parallel to one another, and is made in the two grades designated Types I and II. Type I is intended for use in optical systems and instruments, whereas Type II is intended for use over light sources when plane polarized illumination is required. Type I may be obtained clear or dyed in various colours. Type II is not optically clear, but polarizes light just as efficiently as Type I and is cemented to one side of glass sheet. Messrs. Polaroid Products, Ltd., supply Type I film, cemented between glass plates of optical quality sufficiently good for most purposes and mounted in bakelite rims with an aperture of 4 cm. Disks,  $\frac{1}{2}$ -4 in. diameter, and squares of the same dimensions, with the film cemented to one side of the glass only can also be supplied immediately. The American concern is now manufacturing film 2-2 $\frac{1}{2}$  ft. wide, and, we are informed, will supply 'Polaroid' in production quantities in the near future. Amongst the technical applications of 'Polaroid' to be seen at the demonstration there is the elimination of glare by motor-car headlights, a very striking and beautiful stereoscopic cinema projection in natural colours, a large apertured stereoscope which can be viewed by several people at the same time, a strain viewer and some effects with colourless 'Cellophane' cut out to form pictures which in polarized light appear in a variety of interference colours. In addition, a lamp is arranged to give strong polarized illumination so that the texture of the skin may be examined by the aid of a 'Polaroid' screen.

### A Fairthorne-Salt Mathematical Film

A CINEMA film to show the qualitative properties of the differential equation  $x + \dot{x} = 0$  has been produced by R. A. Fairthorne and B. G. D. Salt and can be obtained from the former at Kirk Michael, Hillfield Road, Farnborough, Hants. It shows two disks of variable radius, revolving at constant speed. The radius of one represents the acceleration  $x$ , so the length of a string unrolled from it represents the velocity  $\dot{x}$ . The radius of the second disk is equal to the length of this string, and so represents this velocity, and the length of a string unrolled from it represents the distance  $x$ . By arranging that the length of this second string, taken in a certain direction, is numerically equal to the radius of the first disk, we get the differential equation. This arrangement may be regarded as embodying the fundamental ideas of the differential analysers used by Dr. Bush at Massachusetts Institute of Technology or Prof. D. R. Hartree at the University of Manchester. The film can be obtained on 35 mm., 16 mm. or 9.5 mm. stock. The methods used can be extended to other differential equations, as was explained in a paper by Mr. Fairthorne read before the International Congress of Mathematics at Oslo last July.

ERRATUM.—In the summary prepared for *NATURE* of Dr. I. V. Newman's paper before the Linnean Society of New South Wales on the angiospermic carpel (*NATURE*, August 1, p. 209), the third conclusion, that "the legume is not a foliar structure", is incorrect. It should read "the evidence is compatible with the legume being a foliar structure".