

Research Items

Albanian Gypsies

MRS. MARGARET HASLUCK has prepared an account of the gypsies of Albania, based partly on literary sources, and partly on her observations, of which the first instalment has appeared (*J. Gypsy Lore Soc.*, Ser. 3, 17, 2; 1938). In Albania there are, broadly speaking, two classes of gypsies, readily distinguishable as nomads living in tents and speaking Romani as their mother tongue, and the sedentaries who live in houses and huts, and have forgotten Romani. The gypsies form a relatively large proportion of the Albanian population, as they number some 20,000 out of a total of one million. The two classes of gypsies are given different names by the Albanians, and these also vary in form and meaning according to locality. Several of these names are to be traced to the root seen in the English word "Egyptian". The houses of the sedentaries, like those of the poor Albanians, are one-storied cottages, with living-room and kitchen. They contain little furniture. In the towns the gypsies form a separate quarter. Sometimes nomads may live in a house for a period, possibly some months, and then revert to tent life. The huts are of wattle and daub, about seven feet high, and, unlike the houses, have no furniture. The tents are usually of the simplest type, the tent being thrown around the pole like a cloak, with an ever-open door. Occasionally a tent with a ridge-pole on two forked uprights is used. Quilts and straw-mats are the only bedding carried, leaves and branches serving for mattresses. The chief utensils are a pot and frying-pan. Thus at need a donkey can transport all the goods of a family. No cradles are used, and small children are carried in a sling thrown over one shoulder, which allows the child's feet to rest on the mother's hip. As linguists, the nomads surpass the sedentaries. The average nomad is taller than his sedentary counterpart, and has a lither body and darker complexion. So dark are they that a nomad woman is sometimes styled "as black as the kitchen crook". Owing to this their tongue appears unusually red and their teeth very white. Hence the Albanian belief that the gypsies have a redder tongue and better teeth than themselves. Some of the sedentary gypsies have fair hair and skin and blue eyes. This colouring others endeavour to obtain by sympathetic magic, putting a silver coin in the milk on St. George's Day and then hanging it round their necks to prevent sunburn.

Emotion and the Secretion of Urine

THE fact that emotional stress and muscular exercise can inhibit the secretion of urine has been known for many years, but its cause has remained obscure. Rydin and Verney (*Quart. J. Exp. Physiol.*, 27, 343; 1938) have now carefully analysed this phenomenon. They find that the nerve supply of the kidney is not concerned in the effect, but that it is due to some circulating substance, other than adrenaline, reaching the kidney through its blood vessels. The inhibition produced by emotion can be imitated with considerable exactness by the intravenous injection of minute quantities of the active principle of the posterior lobe of the pituitary gland, and this has led the authors to suggest that a

discharge into the blood stream of the anti-diuretic principle of the pituitary is the normal accompaniment of such emotional stress. The existence of nervous connexions between the hypothalamic nuclei and the pituitary body adds cogency to this suggestion, and the probability that it is a normal physiological event is supported by the extraordinary potency of very minute amounts of posterior pituitary extract. The authors calculate that an effective dose would mean the exposure of the cells of the kidney to only 30 molecules each of the anti-diuretic principle.

Density of Small Living Organisms

THE *Proceedings of the Linnean Society, 1937-38, Part 2*, contains a very clear description, by Mr. A. G. Lowndes, of an experimental method by which the density of small living organisms may be determined, using the normal specific gravity bottles, in which the organisms are weighed in their natural fluid. The volume of the organism is determined by immersing it either in sea water, if a marine organism, or in a glucose solution and afterwards determining the volume of fluid displaced by the organism by a titration. A certain number of densities are given and also results of experimental test of the accuracy of the method by a comparison of the density of glass beads determined by this method and by direct determination of volume displacement and of weight. The table of densities shows that the stickleback is always denser than its natural medium, and must continually keep itself up by its own muscular effort; a more striking result is that the sinking factor in the stickleback is less at 20° C. than at 10° C. so that the higher the temperature the less the muscular effort required to keep afloat. It is argued cogently that, with small organisms of low density, surface area is the dominating factor so far as body orientation is concerned, rather than the position of the centre of gravity, so that spines or plumose setae increasing the surface will have considerable significance in relation to orientation. (See also *NATURE*, Feb. 12, p. 289.)

Non-Setting of Pears

CERTAIN varieties of good quality pears blossom profusely, but are most irregular in setting their fruit. D. N. Srivastava (*J. Pom. and Hort. Sci.*, 16, 39; 1938) has investigated the problem at East Malling, using one free-cropping variety (Conference) and two shy-cropping varieties (Doyenné du Comice and Pitmaston Duchess). Two waves of dropping were observed, (1) a very early shedding of non-fertilized flowers, (2) a late and comparatively light dropping of partially developed fruits, popularly known as 'June drop'. The main cause of June drop did not appear to be lack of fertilization, since plenty of apparently healthy seeds were found in most of the fruits dropped. Individual fruit size was correlated with length of life on the tree, the larger fruits remaining attached longest, from which it is inferred that dropping is due to competition for nutrients. Cutting back the main branches to eight year old wood increased the set of fruit the same year, but reduced the number of fruit buds the following year. Ringing increased fruit-bud formation but did not

improve the set of fruit, whilst bending over and tying down the main branches gave variable results both for fruit-bud formation and for fruit set. It is thought that the problem is a nutritional one.

Geological History of Indian Rivers

IN the symposium which followed the presidential address to the National Institute of Sciences of India (*NATURE*, 141, 797, April 30, 1938), Mr. D. N. Wadia of the Geological Survey reinforced Prof. M. N. Saha's plea for detailed investigations of Indian rivers by emphasizing how many important changes have taken place within historic times. In common with Saha, he accepts the hypothesis of a great river in early Pleistocene times (the Indobrahm of Pascoe or the Siwalik River of Pilgrim) which flowed from the east—somewhere in eastern Assam or China—along the courses of the present Middle Brahmaputra, the Ganges and the Indus to discharge into the Arabian Sea. Wadia considers that tectonic movements are still taking place in the Himalayan fore-deep. After the separation of the Indus and Ganges groups, the Jumna continued for long a tributary of the Punjab rivers. So late as the twelfth or thirteenth centuries A.D. the Sutlej appears to have flowed as a great river (the Hakra) into the Rann of Cutch. Wadia points out that the Himalayan rivers are cutting back and that there is a real danger of the Kali Gandak tapping the head waters of the Brahmaputra in Tibet and bringing that river—with consequences which can scarcely be even imagined—into the Gandak and Ganges. Another example of rapid changes is afforded by Rennell's map of Bengal (1786) and utterly different from the present. Dr. S. L. Hora of the Zoological Survey of India finds the hypothesis of the Indobrahm supported by the distribution of fish and that the Indus and Ganges were only separated at a very late period geologically. If such major changes are still taking place, it is clear how modern engineering works may be jeopardized without the nature of the changes being thoroughly understood.

Local Variations of Temperature

AN account of local variations of temperature within an area of a few square miles in the neighbourhood of Nottingham was read before the Royal Meteorological Society by A. B. Tinn on April 27. There were eight observation stations with a range of height above mean sea-level of only 130 ft., yet it was found that the daily minimum temperature showed local differences of more than 4° F. in the monthly mean and of 10° F. on individual days. The records of four of the stations were analysed over a period of two years—April 1935–March 1937—to discover the conditions most favourable for large differences. For minimum temperature these were winds from between north and east, fine weather, a high barometer and low humidity, although the conditions giving low minima did not always result in large differences. Rainy and windy conditions bring the differences to a minimum. Daily maximum temperatures show large differences less often, but such differences are occasionally found to amount to between 4° and 6° even in summer and to 8° or 9° in winter, extreme differences being most likely when some places remain in fog while others are in sunshine. The topography of the region does not contain any remarkable features, the high ground

consisting of irregular spurs extending north-north-east from Nottingham Castle while the lowest ground is to the south bordering the River Trent. Its share in producing the observed differences did not show very clearly, doubtless owing to the limited number of stations compared with the variety of topographical nature. Attenborough, only 89 ft. above sea-level, showed the most Continental climate.

Condensation on Board Ship

A RECENT lecture before the Royal Society of Arts by J. S. Duly on "Condensation on Board Ship" contained several interesting illustrations of how well-known physical principles may be applied to large-scale commercial undertakings. He pointed out that cargoes in unrefrigerated holds have such considerable heat capacity that the temperature alters but little, even during a relatively prolonged voyage. Consequently in the tropics, the cargo is at a temperature below the dew point of the warm moist sea-air, and it follows that condensation can best be avoided, not by ventilation, as is usually assumed, but by its opposite, that is, by preventing the entrance of this air. A second point made by Mr. Duly was that for each commodity, the equilibrium moisture content is a function of the relative humidity of the air and (to a small extent) of its temperature. Consequently, in a closed space, a condition is reached in which the moisture content and the atmospheric humidity are in equilibrium. In other words, each commodity maintains around itself an atmosphere of appropriate humidity. Further, the outer layers of a cargo in bulk tend to protect the main mass from changes in moisture content, since any alteration on the outside affects the atmospheric humidity in such a direction as to oppose further change. On Mr. Duly's views, these facts account for damage by condensation being so small as is found in practice. He deduces, besides the conclusion mentioned above, that care should be taken in ship design to avoid either very hot or very cold surfaces anywhere on the walls of the cargo space, and also that the choice of the material from which containers are made is not a matter of indifference.

Orbits of Double Stars

DR. HENRY NORRIS RUSSELL has recently described a method for the rapid determination of visual binary orbits (*Mon. Not. Roy. Astro. Soc.*, 93, 8, June 1933). This graphical method was so easy to apply that two complete orbits could be computed in one day. Dr. R. v. d. Woolley has modified Russell's method for cases where the eccentricity is high, and by assuming that this is unity his graphical method is simple and capable of rapid application ("A Parabolic Double-Star Orbit", *Mon. Not. Roy. Astro. Soc.*, 98, 5, March 1938). This is applied to the double star Σ 1639. The values of the position angle and separation deduced from the elements are compared with nine normal places, and there is a very good agreement in both co-ordinates. It is not, of course, implied that the orbit is definitive, but if the object is carefully observed for a few years it is possible that the eccentricity can be determined. It is also suggested that σ_2 UMa, to which Halpern fitted a parabolic orbit about six years ago, should be observed for some years in order that its eccentricity may be computed.