plantations in New Zealand, it is scarcely surprising that the important question of disposing of the thinnings which it would be necessary to make in them has been receiving the most serious attention; and investigations have been carried out by utilisation research officers.

Apparently it is now hoped that the manufacture of the thinnings into boxes and crates will prove a promising industry. In this connexion, it is pointed out that whereas during the past year saw-mills operating in native bush were, on the average, cutting only up to 40 per cent of their normal output, mills working in exotic plantations were reported to be cutting beyond 60 per cent of their normal capacity. The saw-milling industry is also recognising the value of dry kilns, two new units being established during the year, one for drying box timber, whilst another for the same purpose was under construction. Timber trade-extension efforts, inaugurated during the year for Southland silver-beech (*Nothofagus Menziesii*), were so satisfactory that it was decided to send representatives to Great Britain to continue negotiations. Both in Australia and Great Britain this timber has been shown as promising for rifle-stocks.

It was estimated that the area planted in trees by private companies approached 250,000 acres, an increase for the year of 50,000 acres, whilst local bodies planted 6,500 acres, making the total under corporate control of approximately 27,500 acres. Thus the total area of commercial tree-plantations other than those established by the State Forest Service (which amount to 348,000 acres) is in the vicinity of 277,500 acres.

The area planted by the State fell off during the year, and says the report, "will probably decline still further for some years to come in accordance with Government policy to taper off the afforestation operations of the State". In view of the great commercial activity in this direction, the decision of the Government must be regarded as the correct one; since the policy of a Government should ever be avoidance of direct competition with commercial projects.

The first laboratory study undertaken by the Forest Service—an investigation into the fundamental physical and chemical properties of the indigenous timbers—has been completed after ten years' work. The results will be published shortly, and structural grades, together with working-stresses, developed for the principal species.

The most significant information in the report under review is to be found in the remarks on the exotic plantations. New Zealand has now 625,500 acres of these and the area increases yearly. It is difficult to estimate the important influence these will exert on the commercial development of the country in the future. Already they are being used extensively in the box-making industry for the export of New Zealand produce; "during the year over a million apple-cases were manufactured from insignis pine (*Pinus radiata*), several hundred thousand fruit-boxes for the Pacific Islands fruit trade, over one hundred thousand benzine-cases, and several hundred thousand cheese-crates, besides numerous other containers".

There is much in this annual report which merits study by officers in other parts of the Empire. The research work and experience gained in the utilisation of the thinnings from the exotic coniferous areas should prove invaluable to other growers of this type of plantation.

University and Educational Intelligence

CAMBRIDGE.—R. C. Evans, of Clare College, has been appointed University demonstrator in the Department of Mineralogy and Petrology.

Frank Smart prizes have been awarded to M. Ingram, Queens' College (botany) and G. C. Varley, Sidney Sussex College (zoology and comparative anatomy).

W. S. Bristowe, Gonville and Caius College, has been approved for the degree of Sc.D.

EDINBURGH.—Dr. D. O. Morgan, senior research assistant at the Institute of Agricultural Parasitology, St. Albans, has been appointed lecturer in helminthology in the University and in the Royal (Dick) Veterinary College.

WALES.—Dr. Ralph M. F. Picken, medical officer of health of the City of Cardiff, has been appointed Mansel Talbot professor of preventive medicine in the Welsh National School of Medicine, Cardiff, in succession to Prof. E. L. Collis, who is retiring. Dr. R. St. A. Heathcote has been appointed to the independent lectureship in materia medica and pharmacology.

Dr. John Robinson Airey, principal of the City of Leeds Training College since 1918, is retiring at the end of the present session. A well-known mathematician, Dr. Airey has, since 1912, been a member of the Committee on Calculation of Mathematical Tables, and was secretary to this Committee from 1918 until 1930. Dr. Airey's work was of prime importance in the development of aircraft during the War when his services were available at Farnborough. At present he is engaged on calculations for the British Association Committee on the Constitution of the Stars. Dr. Airey will be succeeded at the City of Leeds Training College by Prof. R. W. Rich, professor of education at University College, Hull, for the last three years.

TECHNICAL education in England and continental Europe was discussed on May 10 at a meeting of the Royal Society of Arts. Lord Eustace Percy was in the chair. The proceedings, reported in the Society's *Journal* of May 26, began with a paper by Mr. A. Abbott, formerly chief inspector, Technological Branch of the Board of Education, whose official report on his visits to France, Belgium, Czechoslovakia and Holland was recently noticed in these columns (NATURE, Dec. 24, 1932). Among other opinions to which his special qualifications lend exceptional weight are the following: the training in manual skill given in senior elementary schools has been of substantial value to British craftsmanship and should be increased in volume and enlarged so as to include a far wider range of materials and operations; we should continue to look to our schools of general education rather than to trade schools, as on the Continent, for the great bulk of our supply of skilled workmen; as regards the higher staff of industry, we should arrange for the release of young men during working hours for attendance at technical schools instead of relying on evening study; the leaders of industry, both employers and employed, should overhaul antiquated recruitment policies and readjust them to modern conditions, which have been transformed in the last thirty years by the wide extension of

secondary education and the recent institution of central, junior technical and junior commercial schools. The discussion which followed the reading of the paper brought out interesting points in relation to changes in the proportion of skilled workers in industry, changes in qualifications needed for success in industry, technology in the modern universities and the teaching of artistic crafts in trade schools.

Calendar of Nature Topics

'Dog Days'

July 3–August 11. The period of greatest heat in the summers of western Europe usually extends from early in July until about the middle of August. At the beginning of July the sea, which is slow to warm up, still keeps the temperature moderate, while towards the end of August the shorter days and smaller elevation of the sun begin to be noticeable. In the French Revolutionary Calendar of 1793, the period from July 19 until August 17 was the month "Thermidor". In Greek mythology the heliacal rising of Sirius, the Dog star, was associated with the coming of the dry, hot and sultry season, and the evil effects of this period on vegetation led to a belief in the baleful influence of Sirius on human affairs in general; the belief was adopted by the Romans and by them transmitted over the greater part of Europe. In England the weather of the 'dog days' is proverbially sultry and thundery. Towards the end of July especially, there have, in recent years, been a number of severe night thunderstorms in the neighbourhood of London.

A Parasite of Gorse and its Economic Possibilities

In July the pods of many gorse bushes (*Ulex europœus*) harbour in their heart an insect enemy which has just passed into the pupal stage preparatory to emerging as a weevil, *Apion ulicis*. During this month also the adults make their appearance, and although they do little damage to gorse bushes, the destruction caused by the larval stage within the pods affects seriously the fertility of the plants and their chances of spreading. Dr. W. Maldwyn Davies found that the numbers of pods infected, in samples taken throughout the length of Britain, varied from 0 per cent, which was rare, to 92 per cent, but 50 per cent infestation and above was common. The numbers of individuals in a pod varied from one to sixteen, the average being 4·6, and of 500 pods collected at Harpenden, 69·4 had their entire contents devoured by the larvæ (*Ann. App. Biol.*, **15**, 263; 1928).

The point of the investigation lies far away in New Zealand. There Darwin observed gorse plants in 1835, and the introduction, like so many others, has proved disastrous. For in the intervening years gorse has so spread that it now covers large areas and threatens to make derelict some of New Zealand's most valuable pasture land. Could a parasite be discovered which would destroy New Zealand's unwanted gorse, as introduced cochineal insects are destroying Australia's prickly pear, a difficult problem would be solved. The weevil, *Apion ulicis*, so far satisfies the conditions that it has been found to destroy the fertility of the plant, while experiments have shown that it is unlikely to attack any other leguminous plant.

Some Problems of Birds' Eggs

The first clutches of eggs have long since hatched, and in many cases the young of the second clutch are now being fed by their parents, even in northern Scotland; the egg graph of the year is rapidly declining. This suggests that some problems should be stated before it fades out. Why is it that every full clutch of house-sparrow's eggs contains one egg which departs from the symmetry of the remainder, a longer rather narrower egg, often a little different in coloration? Is it that the muscles of the oviduct do not reach their standard tone until after a first egg has passed? Why is it that in some species the average number of eggs in a clutch seems to be different in different localities? What regulates the number of eggs in a clutch, for it seems to show a geographical relationship? This last problem has recently been investigated by Charles K. Averill (*Condor*, May, 1933, p. 93) and he finds that amongst North American passerine birds the small clutches, with a maximum of three eggs, are invariably of limited distribution in the south, south-west or west, although they do not differ particularly in size from their representatives in the north and east. Clutches of four to six eggs are laid by the majority of passerine birds, but none are Holarctic except about ten genera of long-winged boreal or arctic birds. Large clutches of seven to ten eggs belong to a group of very small woodland birds, Holarctic and of extensive distribution, although of feeble flight, chiefly the goldcrests, wrens, creepers, nuthatches and titmice. There are exceptions to these generalities, but they are generalities nevertheless.

Number of Eggs and Size of Bird

It may be said that birds of temperate zones lay more eggs than their representatives in the tropics. Chapman cites, among others, the sooty, bridled, and noddy terns of the tropics, which lay only one egg each, whereas the temperate species, arctic, roseate, and common terns, usually lay three. But the first group includes large birds, the second small; and as a rule the smaller birds lay the most eggs, and the eggs are smaller. Averill compares several species; the three to five eggs of the western grebe measure 2·50 in. × 1·54 in., the four to eight or six to nine of the pied-billed grebe, 1·72 in. × 1·17 in. The eggs of the large owls (great horned, barred, and great grey) measure about 2·16 in. × 1·7 in. and there are only two to four in a clutch, whereas the four to six clutches of the smaller species (for example, long-eared, and screech) measure 1·65 in. × 1·3 in. or less. The black swift lays one egg, the much smaller chimney swift four to six; in the genus *Sula*, the North Atlantic gannet lays one egg, the much smaller booby, a tropical bird, has two. As a rule, the larger bird in a group of similar habits and environment lays fewer eggs.

Perhaps the amount of food required is a factor regulating size of clutches, for the larger chick requires more parental attention during the nestling period, and there must be a limit to the number of mouths that can be fed. The limiting factor does not lie in the capacity of the bird to lay eggs, for in the case of a water-hen nesting on a pond in the Royal Botanic Gardens, Edinburgh, the regular removal of one egg from an incomplete clutch induced the bird to lay on until it had contributed about thirty eggs, in place of the normal number of seven to nine.