

a work on the anatomy of the grasses has been prepared and should, it is hoped, be ready for the press before the end of 1957; and anatomical studies of other monocotyledons have been published or are in progress. The routine work of the Laboratory is concerned with the very diverse, and sometimes diverting, materials submitted for examination: in 1956 a piece of wood from Herod's palace at Jerusalem was found to be *Juniperus oxycedrus*.

The report also deals comprehensively with the work in progress in the Gardens, including its several sections from the Arboretum to the Tropical House. It concludes with a record of the papers published during the year together with a staff list.

C. W. WARDLAW

THE CIVIL SERVICE

REPORT FOR 1956-57

THE ninety-first report of H.M. Civil Service Commissioners, covering the period April 1, 1956-March 31, 1957*, again notes a decrease in the number of candidates for the open competitions of the administrative class. Although the number of entries was the lowest since 1949 and only thirty-three out of the fifty vacancies allotted to this competition were filled, the entry for the 1957 competitions appears to be somewhat stronger both in number and in quality than that of 1956. To fill vacancies left by the 1955 open competition, a supplementary competition for the administrative class was held in the summer of 1956 to offer an opportunity to those who had remained at the universities for research, or had taken up other employment and had outstanding intellectual ability. Of the twenty-one candidates, the five who were successful had been engaged in research or in university teaching since graduating. The limited competition for the administrative class was somewhat more successful than in the previous year, and the results of the innovations tried seem encouraging. Recruitment to the statistician class remained difficult and the number competing for the special departmental class declined further. The open competitions for the executive class produced enough recruits to fill the vacancies notified, but it was only the adoption of a new competition based on the General Certificate of Education that maintained the level of recruitment among young people. The growing proportion of women candidates in some competitions, particularly those for the executive and clerical classes, suggests that the achievement of equal pay by 1961 is increasing the attractiveness for a woman of a career in the Civil Service. The method of continuous open competition was used for all scientific classes, and the results of the senior scientific officer/scientific officer competitions were relatively satisfactory, especially in the senior grade, for which recruitment appears to be easier than that of scientific officers of the quality and in the numbers required by departments. The greatest deficiency was in filling posts for scientific assistants, though a fair number of the vacancies are being filled by temporary people who are gaining the two years experience required to qualify them for the competitions.

* Report of Her Majesty's Civil Service Commissioners for the period 1st April, 1956, to 31st March, 1957. Pp. 40. (London: H.M. Stationery Office, 1957.) 2s. 3d. net.

The quality of candidates attracted by the research fellowship competition remains high, and the departments concerned appear to have been impressed very favourably by the work of those in the past. Of the twenty-seven fellowships offered this year, nine senior and thirteen junior fellowships have been awarded. Although the competition for patent examiners took a slight turn for the better, the number of vacancies is so large, and the problem of recruitment so difficult, that for a limited period candidates are being considered who hold honours degrees in non-scientific subjects. It remains as difficult as ever to recruit candidates with technical qualifications for the factory inspectorate. The information work of the Commission increased both in volume and in complexity and an information officer was appointed to organize and develop it. The arrangement made in 1955 whereby younger members of the administrative class act as links between the Civil Service and their own colleges or universities appears to fulfil a real need, and the arrangement made in December 1956 for sixty undergraduates, representing most of the British universities, to spend a week visiting Government departments also appeared to be a success.

ACCIDENTS IN CHILDHOOD

A YEAR ago the European Regional Office of the World Health Organization asked a group of experts from many countries to consider how accidents in childhood could be prevented. In most countries in Europe infant and child mortality has been steadily decreasing in recent years, and in many places has reached significantly low figures. Deaths due to infections and nutritional disturbances have fallen to a level considered unattainable only a few years ago. Against this, the death-rate due to accidents remains high and for many types of accidents has increased. As disease becomes more effectively controlled, accidents are assuming a proportionately greater importance. In some countries they have become the chief cause of death in childhood and adolescence and account for 30-40 per cent of all deaths in the age-group 1-19 years. Among certain groups of children, greater numbers are killed by accidents than by all other causes combined. This unenviable prominence of accidents in child mortality throughout Europe is due to the new and dangerous hazards introduced into many homes and countries by modern technological progress. The spread of electrification, especially in rural areas, the introduction of highly potent insecticides, the increasing numbers of motor-cars and bicycles on roads designed for thirteenth- to fifteenth-century traffic, may be cited as examples.

It is not only as a cause of death that accidents in childhood are important. The number of non-fatal accidents is very much larger—100-200 times greater and by some estimates even more.

In a preliminary survey the advisory group examined the main causes of accidents and at what ages they occurred*. These showed that mortality from accidents is highest at the pre-school age, lowest among school children, and again somewhat higher in adolescence. Since the beginning of this century,

* World Health Organization. Technical Report Series, No. 118: Accidents in Childhood: Facts as a Basis for Prevention. Report of an Advisory Group. Pp. 40. (Geneva: World Health Organization; London: H.M. Stationery Office, 1957.) 1 Swiss franc; 1s. 9d.; 0.30 dollars.

mortality from accidents has decreased for the pre-school group, remaining at almost the same level in the school-age and adolescent groups. The decrease in pre-school age accident mortality took place in spite of a growing traffic accident toll, as a result of diminishing deaths from drowning and burns and scalds. In school age and adolescence, the increasing traffic accident mortality cancelled out the decrease in deaths from other accidental causes.

The main groups of fatal accidents in children are those caused by motor-vehicles, drowning, and fire and burns, the proportion varying from one country to another. Accident mortality was found to depend upon the peculiarities of the situation in which the population was living. In some countries, for example, although the number of motor-vehicles in use is rising, the accident-rate is not increasing in like proportion.

Analysis by sex as well as age reveals important differences. The aggregate accident mortality in the European region shows that the rates for boys are double or triple those for girls at most ages. The least difference is observed at the younger ages. There is a marked preponderance among boys and male adolescents of injuries associated with outdoor activities, and among girls of burning accidents caused through the wearing of light inflammable clothing.

Not unexpectedly, the group found that mortality data do not in themselves give a complete indication of frequency or of social and economic consequences of accidents. Morbidity data is required to complement mortality statistics and to expose potentially dangerous accidents. While mortality from accidental poisoning is low in most countries, morbidity studies have revealed a high frequency of accidental poisoning. Morbidity studies also show that a certain attitude of carelessness and instability of purpose are much more prevalent among those children who have had accidents. Children of this type often come from broken homes or problem families; their recklessness and disregard of consequences is primarily a mental factor which may at times express itself in physical behaviour resulting in unforeseen accidents.

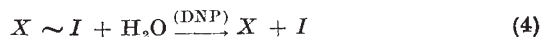
The advisory group was unable to make detailed examination of the possible methods of preventing accidents to children but, in principle, showed that the bases of accident prevention fall into three categories: education; engineering; regulation and law enforcement. At present much of the organized accident prevention work for children in Europe is directed to traffic and road safety; such activities should be increased in view of the growing importance of motor-vehicles as a cause of injury to children. A substantial number of programmes should also be directed to safety in the home and its vicinity and to the prevention of drowning accidents. Many of the organizations which at present limit their efforts to traffic-safety campaigns could with advantage turn their attention to other hazards of childhood and undertake preventive measures in co-operation with those who are primarily concerned with child welfare. In one country, for example, the paediatricians, working through their national and local committees, have been largely instrumental in developing, in co-operation with the pharmaceutical industry, measures to minimize the hazard from aspirin poisoning and, in co-operation with paint manufacturers, a standard for a paint which is safe for use on children's toys, furniture and interior surfaces. Paediatricians in some countries, because of their special interest in the infant and pre-school child, have led the movement to focus attention on accident prevention in this age-group—the least accessible to organized safety education and yet the one with the highest accident mortality-rates of childhood. Physicians who supervise the health of infants and children, public health nurses, nursery school teachers, and others with access to the family and homes of these small children, have begun to give guidance in accident prevention as a part of their instruction in child care. For some years past, schools in many countries have been giving training in road safety. Some countries provide instruction in swimming and first-aid and on the safe use of the bicycle. The use of the home safety check-list, taken home by the school-child, is a part of the safety programme of some school systems.

RELATIONSHIP BETWEEN THE HYDROLYSIS OF ADENOSINE TRIPHOSPHATE AND OXIDATIVE PHOSPHORYLATION

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IN a recent preliminary communication¹ from this Laboratory it was reported that liver and heart mitochondria contain four different enzyme systems which bring about the hydrolysis of added adenosine triphosphate. Three of these systems, designated by their *pH*-optima 6.3, 7.4 and 8.5, were stimulated by dinitrophenol. It was suggested that these three different adenosine triphosphatases might be related to the three dinitrophenol-sensitive phosphorylative steps in the respiratory chain. An earlier formulation² of the oxidative phosphorylation was expanded into



Reaction (1) represents the hydrogen (or electron) transfer reaction in which energy is conserved by combination of the oxidized product with *I*; reaction (2) is an energy-transfer reaction; while reaction (3) is the phosphorylation reaction. It is supposed that