NATURE

No. 4086 SATURDAY, FEBRUARY 21, 1948 Vol. 161

| CONTENTS | Page |
|---|------|
| Progress in Army Education | 257 |
| University Representation in the House of Commons | 259 |
| A Short History of Science. By Prof. J. A. Crowther | 260 |
| Calculus Based on the Fundamental Concept of Number. By | 261 |
| The Present Outlook in Army Education. By Major-General Cyril Lloyd, C.B., C.B.E., T.D. | 262 |
| Structure and Physical Properties of Metals. By Dr. H. Lipson | 263 |
| Geology of the Salt Range of the Punjab. By Sir Edward Bailey, F.R.S. | 265 |
| Sir Charles Sherrington and Diphtheria Antitoxin | 266 |
| Obituaries: | |
| Prof. A. N. Whitehead, O.M., F.R.S. By Sir Edmund Whittaker, F.R.S.; F. Ian G. Rawlins | 267 |
| Prof. J. N. Brønsted. By R. P. Bell, F.R.S | 269 |
| Mr. Orville Wright. By M. J. B. Davy | 269 |
| News and Views | 270 |
| etters to the Editors : | 2,0 |
| Animal Tissue Cells in Protein-Free Media.—Aage Bohus Jensen | 273 |
| Failure of Sulphanilamide to Inhibit Calcification of Bone,—Dr. Zelma Baker Miller, Dr. Jerome Waldman and Prof. Franklin | 213 |
| C. McLean | 273 |
| Bilirubin-Serum Protein Complexes and the van den Bergh Reaction,—C. H. Gray and Dr. R. A. Kekwick | 274 |
| Alkaline Phosphatase in Fish Gut.—A. H. Al-Hussaini | 274 |
| Behaviour of Gorini's Acid-Proteolytic Lactic Cocci with Peni- cillin.—Annamaria Torriani | 275 |
| Aerobiology on Commercial Air Routes.—Dr. I. V. Newman | 275 |
| An Undescribed Structure in the Rodent Rhinarium.—Dr. W. C. | |
| Osman Hill | 276 |
| Chromosome Number of Cardamine pratensis.—Dr. H. W. Howard | 277 |
| Chronometric Observations of the Song of Fringilla coelebs Linn. —D. R. Barber | 277 |
| Earliest Known Prehistoric Industry T. T. Paterson | 278 |
| Combined Radar, Photographic and Visual Observations of the Perseid Meteor Shower of 1947.—Dr. Peter M. Millman, Dr. D. W. R. McKinley and Miriam S. Burland; Dr. A. C. B. Loveli | 278 |
| A Submerged Ancient Cliff near Plymouth.—Dr. L. H. N. Cooper | 280 |
| Lead Telluride Cells for Infra-Red Spectroscopy.—O. Simpson, Dr. G. B. B. M. Sutherland and Dr. D. E. Blackwell | 281 |
| High-Frequency Characteristics of Lead Sulphide and Lead Selenide Layers.—R. P. Chasmar | 281 |
| Scattering of Neutrons by Lead.—R. Latham and J. M. Cassels . | 282 |
| Production of Nitrogen Atoms in the Upper Atmosphere.— Prof. G. Herzberg and L. Herzberg | 283 |
| Calculation of the Piezo-electric Constants of α - and β -Quartz. —Dr. Bishambhar Dayal Saksena | 283 |
| Max PlanckProf. E. N. da C. Andrade, F.R.S | 284 |
| Stonyhurst College Observatory. By Rev. P. J. Treanor, S.J | 285 |
| The Assaying of Penicillin | 285 |
| Long-Distance Correlation of Boulder Clays. By D. F. W. Baden-Powell | 287 |
| Amalgamation of Some Alloys of Gold, Silver and Copper. By Dr. Douglas Rennie Hudson | 288 |

Editorial and Publishing Offices
MACMILLAN & CO., LTD.,
ST. MARTIN'S STREET, LONDON, W.C.2.

Telephone Number: Whitehall 8831

Telegrams: Phusis Lesquare London

Advertisements should be addressed to
T. G. Scott & Son, Ltd., Talbot House, 9 Arundel Street, London, W.C.2
Telephone: Temple Bar 1942

The annual subscription rate is £4 10 0, payable in advance, inland or Abroad All rights reserved. Registered as a Newspaper at the General Post Office

PROGRESS IN ARMY EDUCATION

THE Army Education Scheme (Interim Period)*, concerning which a statement by Major-General Cyril Lloyd, director of Army education, appears on p. 262 of this issue, has now become effective. In view of the wide and keen interest in adult education to-day, the developments in compulsory national service, and the concern of everyone that the education of the youth of the country should be interrupted as little as possible, it is to be hoped that this new Scheme will receive close study and careful discussion.

Education of some sort or another is nothing new in the British Army. It goes back more than a hundred years. But for most of that time it was so much in the doldrums as to be practically non-existent. Then, in 1940, it began such a period of development and expansion that it can be fairly claimed that, at the beginning of the Second World War, Army education was reborn. Developments since that date have been described and criticized in Nature from time to time; a comprehensive review of the entire project during the latter part of, and since, the Second World War, by General Lloyd, was published in Nature, 158, 775, 821, December 1946. His present statement brings the review of Army education up to date.

Naturally, in 1940, Army education suffered its new birth pangs, and for some time afterwards experienced the staggers of adolescence. Difficulties were encountered by this stupendous undertaking, and stumbling-blocks had to be removed. There was, of course, considerable criticism; and from this arose one of the greatest problems, for, sympathetic criticism aside, there were too many men (and women) who, though educationists and educators in civilian life, were unable to grasp the fact that in Service life, especially during war-time, actions and attitudes must be different. Men in the Army (no matter whether at war or at peace) are first and foremost soldiers and have to be trained as such: their education is, of course, happily an integral part of this; but whatever ingenious schemes are adopted the soldier is not so advantageously placed as the university student. It must be a relief to the Army education authorities to realize that the time has now come when most of those who found it difficult to adapt themselves to such exacting conditions as Army life must inevitably inflict on the cultural life have either been able to do so now by learning and appreciating military methods or have themselves returned to the comparatively easier civilian life and work.

In spite of carping (as opposed to constructive) criticism, real mistakes, and the many problems peculiar to military organisation, however, the adolescent period of the new Army education is quickly passing, and it is now approaching sturdy manhood as evidenced by this new Scheme, which is obviously based on recent past experiences. Thinking

*Army Education Scheme (Interim Period). Army Council Instruction. Nos. 1076 to 1083 of 1947. Circulated down to Companies, Batteries and Equivalent Units. (The War Office.)

over the nurturing of this healthy though sometimes intractable organism, one calls to mind the valuable work of the Central Advisory Council for Education in H.M. Forces, the secretary of which is Dr. Basil Yeaxlee, reader in educational psychology in the University of Oxford, and the wise guidance, sympathetic encouragement and practical assistance of such men as Sir Ronald Adam, then an active soldier and eventually adjutant-general to the Forces, now president of the British Council; Sir Philip Morris, himself at one time director-general of Army education, now vice-chancellor of the University of Bristol; and there were others. Since 1945, Major-General Cyril Lloyd has been director of Army education, and there can be no doubt that its satisfactory progress is due mainly to his efforts.

Despite retrenchments and economies, the loss to civilian life of valuable personnel, and the peripatetic nature of Army units, Army education has been wisely kept as a vigorous and integral part of Army life. In view of compulsory national service, this is as it should be, of course; but we have no doubt that the present position was assured only by untiring efforts, tactful judgments and astute appraisement of personnel on the part of those most directly concerned, for there has been, and still is, apathy towards Army education among certain leaders both inside and outside the ranks of the Army.

It is good to note that close and congenial relations exist between the Army Education Directorate, the Ministry of Education and the local education authorities. This will undoubtedly prove to be of advantage to all three. We have no doubt that the universities and technical and other colleges will play their part when requested to do so. The Army has also ensured that future developments in civilian education and recent advances in educational science will be utilized for the stimulation of its own educational projects through the medium of an Educational Advisory Board which is composed of leading British educationists.

It is to be noted with satisfaction also that the authorities recognize that, though during his period of national service a soldier's military training is of paramount importance, the majority of these men will be returning to civilian life after their short period of service. This is provided for in the new scheme through individual and vocational education. So, except for the more advanced academic students, there seems to be no reason why a man should not continue his education through his period of national service. One recognizes a blemish on the organisation of civilian education when one learns that even now Army education authorities have to deal with youthful illiterates; it seems absurd that for men and women of eighteen years of age the Army education scheme has to provide a 'Preliminary Education' for those who are backward; yet such is the case, and it is to the credit of the Army education authorities that they recognize and are dealing with the problem.

There is nothing to which serious objections can be raised so far as the curricula for primary, general and individual education are concerned, though we still view with some misgiving the considerable emphasis placed by the Army Council on citizenship and current affairs. It may be safely assumed that this is in accord with the present-day fashion in adult education. Yet we believe that citizenship is best dealt with in the ordinary subjects of the curriculum, especially literature, history, geography and science, and not lifted out of the general scheme and treated as a separate subject. Thus presented, all these subjects would inevitably lead on to present-day social problems and sociology, which in themselves form the ideal background for the training of good citizens. Current affairs can conceivably be a valuable discipline in adult education if only a dispassionate choice were assured; but all too frequently it is political affairs which are chosen (we cannot, for example, conceive of many teachers choosing at the end of September the annual meeting of the British Association as a 'current affair'), and these, especially during discussions, lead on to arguments based on party politics, irrational and sometimes even ill-informed bias, and frequently gusts of emotion.

Apart from this undue emphasis, the Army education authorities have shown themselves familiar with modern educational trends in their choice of academic, technical and vocational subjects. Science plays its part; and here the authorities wisely bear in mind that their purpose in general is not to train scientists, but to see that the men and women in their care are given an opportunity of learning what science really is and what it is doing. The general tendency is to begin with science in everyday life and thence leading on to science in social life. Thus the impact of science on society and the social function of science find a place in the general Army educational programme.

The British Army, even in peace-time, is widely scattered at home and abroad. The task of organising its education is very difficult. Isolated units, apathetic commanding officers, sparsity of trained instructors occur here and there, and raise problems which have to be faced. There are, therefore, problems that no school or university, not even the most widely spread and rural county authority, ever have to face. Yet these are now being attacked in a manner that should inspire the admiration and goodwill of all other educationists. There is still much to be done, apart from meeting the criticisms of those whose views are too personal or parochial to enable them to envisage and appreciate the scheme in its entirety. But the past seven years have proved beyond doubt that the British Army is taking the education of its men and women seriously and has placed responsibility for it in the right hands.

This scheme for the interim period augurs well for the future schemes which will be devised for the educational needs of the peace-time Army—schemes which we understand will be progressively introduced so that adult education can be fully implemented when the Army has reached its final peace-time shape and composition.