

represent the last word in all-round fastness and in tinctorial properties. Turning to textile auxiliaries, he outlined the fundamental principles involved in the modern 'soapless' detergents, the success of which led to intensive research in long-chain chemistry and the production of many new interesting products of which the best known is Velan PF for producing water-repellent finishes resistant to laundering and dry cleaning. Among other advances associated with the dyestuffs industry, Mr. Baddiley referred to the colour film, the discovery of sulphanilamide, and the synthetic polymers.

### Commerce and the Universities

THE question of the suitability of existing arrangements in universities for the training of undergraduates for commercial careers was recently investigated by a sub-committee of the Association of British Chambers of Commerce. This body, having examined the subject in the light of information collected from university appointments bureaux, professional bodies, individual firms and various chambers of commerce, drew up a short "Report on the Commercial Employment of Students with Degrees in Commerce". The report estimates at less than a hundred the deliberate annual recruitment of young graduates into commerce for the purpose of ultimately using them for the higher executive posts. These recruits are taken mainly by large concerns engaged in either manufacturing or retailing: no evidence was forthcoming of any appreciable recruitment to wholesale houses or shipping concerns. It appears that the recruitment of graduates on the business side is sporadic and exceptional and the firms which employ them make no special arrangements, such as are common on the industrial side, for their special training in business methods. The sub-committee considers that it would be advantageous to British commerce if a larger proportion of graduates were recruited, but that this will not be possible unless steps are taken to incorporate practical office and commercial experience in the university courses.

THE Association's Executive Council adopted the report and decided to circulate it with a view to a conference with representatives of the universities for discussion of the subject and for the devising, if possible, of a scheme of training in the operation of which the chambers of commerce would collaborate. The kind of collaboration envisaged is indicated by mention in the report of a sandwich system of six months in business alternating with six months of full-time university work, or a preliminary spell of work in business before entering a university, in which studies would be organized in two parts separated by another spell of business employment. The report has been coupled, not, perhaps, very appropriately, with the Spens Report on Secondary Education in a motion agreed to in the House of Commons on February 15 in favour of the Board of Education consulting local education authorities and others as to how far the recommendations in the reports should be carried into effect. Presumably the recommendation of the Chambers of Commerce will

be taken up by the Universities Committee of Vice-Chancellors and Principals. In the discussion in Parliament, the Board's attitude towards commercial training in secondary schools was summed up. From eleven to sixteen years of age, geography and mathematics may well be taught so as to arouse an interest in the world of commerce, and there is a real place for commercial training on broad lines after the School Certificate; the prejudice against commerce as unworthy to rank with more academic careers should be eradicated.

### An Anatomist Analyses

THE editor of the *Lancet* has begun the interesting experiment of throwing open his journal to selected medical men in various occupations, so that they may express unfettered thoughts upon any subject they choose, under the title "Grains and Scruples". The first series of contributions, five in number, appeared in the numbers of December 1938 "from an Anatomist". They discourse on the alleged gradual but definite degeneration of the medical student, who in former days is said to have been far older, more mature, and more responsible than his successor; upon the disappearance of the old-fashioned schoolboy bug-hunter, and other topics familiar to the teacher of long standing. But years have coloured the outlook, for there are still keen schoolboy naturalists, and while maturity and responsibility are difficult qualities to assess, the records show that the age of entry has been rising instead of falling. In the old days, students entered the universities at years of indiscretion undreamed of now, and the writer knew a surgeon-admiral who as a student, having passed all his medical examinations, put in a year on a whaler, until he should attain the legal age of qualification. That cannot happen often in these days.

BUT more profound puzzles confront the "Anatomist", and he poses the recurrent problem of the persistence in many groups of animals of primitive, generalized types. If changing environments demand the evolution of more complex animals to meet the new needs, how is it that there have survived through aeons of time, apparently completely meeting the requirements without significant structural change, basic forms upon which the higher developments of the group are founded? As examples of these 'immature' forms which have not developed their potentialities, he gives the shark, the giant salamander, the tuatara lizard, the ostrich, and following Bolk's thesis of infantilization he would regard man as the permanent baby amongst mammals, emphasizing that lack of structural specialization which is man's saving grace. Finally he makes a reasoned plea for linking man ancestrally with the pig. But here he controverts his own premises, for while rightly stressing the need for depending upon characters not liable to environmental adaptation, he selects as major resemblances, dentition and hair-covering, length of tail and colour, than which no mammalian characters are more liable to adaptive variation. He does not suggest

how the extremities of man are to be derived from those of the pig, but perhaps he would include the Devil amongst men.

#### Sir C. V. Raman, F.R.S.

IN 1928, Sir Venkata Raman published an account of the new radiation effect now generally known as the Raman effect, and the Indian Academy of Sciences, of which he is president, has had the happy idea of celebrating this and Sir Venkata's fiftieth birthday by the issue of a special commemorative volume. This volume, which contains thirty-eight papers, submitted from various parts of the world, opens with a brief biography of Sir C. V. Raman. The writer of this, whilst referring to the fact that Sir Venkata received his early training in physics at the Presidency College, Madras, unfortunately omits to mention how much the future Nobel prizewinner owed to the then head of the department of physics, the late Prof. R. Ll. Jones, who carried to India the traditions of the Cavendish Laboratory.

THE contributions to the commemorative volume deal with the many aspects of physics with which Raman has been associated. Only two papers have been submitted by workers in Great Britain: Sutherland contributes a theoretical paper establishing the connexion between the force constant, the inter-nuclear distance, and the heat of dissociation of a diatomic linkage, whilst Angus gives a valuable critical survey of the Raman spectra of terpenes. From Prof. K. W. F. Kohrausch's laboratory at Graz, which has played so prominent a part in the application of the Raman effect to chemical problems, there are ten papers dealing *inter alia* with asymmetrical phthalyl chloride, dimeric keten, *cyclobutane-1:2-dicarboxylic acid* and its derivatives, tetrolic acid and the nitro-group. Papers on analogous subjects have been sent by Bonino and Manzoni-Ansidei, Murti and Seshadri, Mizushima and Moreno. Hibben provides a striking statistical analysis of the trend of Raman effect research during the ten years since its discovery; he shows how the fuller theoretical understanding of the effect (1932-34) gave an impetus to experimental investigation and discusses the types of organic and inorganic substances which have received attention. The remaining papers are concerned chiefly with the other aspects of optics to which Raman and his students have devoted attention. The volume forms a noteworthy tribute to one who has done so much to further original research in India.

#### A New "Nomenclator Zoologicus"

THE preparation of a new "Nomenclator Zoologicus", announced in 1935, is now approaching completion. It constitutes an attempt to bring together the names of all the genera and subgenera in zoology that have been described from the tenth edition of Linnaeus, 1758, up to the end of the year 1935, with a bibliographical reference to the original description of each. It will also include the great majority of alternative spellings that have appeared during that period. Another feature that will, it is thought,

be found valuable for systematists relates to cases where a new name has been proposed for a homonym. In these instances a cross-reference is given under the homonym to the new name. It is estimated that the work will comprise some 225,000 entries, of which about 5,000 appear to have been omitted from all previous publications of this character. It is proposed to publish the work in four volumes of nearly 1,000 pages each, which it is hoped it will be possible to issue at intervals of about six months. The Zoological Society of London has already borne the whole cost of preparation (approximately £1,800), but the Council of the Society does not feel justified in incurring further expenditure in respect of this enterprise, which would involve an additional £3,600. However, with the aid of various grants from outside sources, the editor, Dr. S. A. Neave, has now been able to arrange for the printing and publication of the work. It is proposed to publish it at the low advance subscription rate of six guineas, postage included, for the four volumes, provided that a sufficient number of undertakings to subscribe can be obtained. If these are adequate, it is hoped to issue the first volume during the coming summer. Subscriptions should be sent to Dr. S. A. Neave, Imperial Institute of Entomology, 41 Queen's Gate, London, S.W.7.

#### 'Modern Man' from Choukoutien, China

SKELETAL remains of 'modern man' of Upper Palaeolithic age have at last been found in material from the Choukoutien caves, near Peking, the now world-famous site of discovery of Peking man. This latest find is no more than was to be anticipated from the discovery here some few years ago of relics of palaeolithic man; and indeed it is overdue. The new material, it is stated in a dispatch from the Peking correspondent of *The Times* in the issue of February 21, is from the Upper Cave, and consists of the remains of seven individuals, who, it would appear, had belonged to one family—an old man, estimated to be more than sixty years of age, a younger man, two relatively young women, an adolescent, a child of five, and a new-born baby. Such a varied assemblage should in the ordinary course provide adequate material for arriving at a fairly close approximation to the racial character of the group; but it would appear that these skeletal remains are remarkably, and indeed unusually, diverse in character for so closely associated a group.

THE brain case of the old man points to a very primitive type, not far removed from Neanderthal man, although in other attributes he approaches European man of the Upper Palaeolithic period, while the facial characters suggest recent Mongolian types, without, however, being identical with them. Of the two women's skulls, one presents resemblances to the Melanesian type of New Guinea, while the other is similar to that of the modern Eskimo woman. No features, however, occur among the modern population of North China which would justify attribution of an ancestry leading back to this population of the Upper Cave. Prof. F. Weidenreich is