

of common cold was an organism of this type, measuring $0.2-0.3\mu$ in diameter. Dr. Gordon gave an account of his recent researches, which are entirely confirmatory of the view that influenza is similarly due to organisms of this type, which can be obtained from the nasal and pharyngeal secretion during the first three days of the disease, though not later.

The section of physiology met on two days only, each being taken up mainly with an interesting discussion. The first, on the "Etiology of Rickets," opened by Dr. Leonard Findlay and Prof. Mellanby, was mainly of medical interest, but it left two distinct impressions on the lay mind: (1) That there is still much difference of opinion in regard to the cause of this blot on the health of our great cities, and perhaps too great a tendency to the belief that one single factor is responsible rather than a complex of factors; and (2) A strong impression of the valuable return which is bound to accrue to the community through the activities of the Medical Research Council under the guidance of its present secretary.

The other discussion in this section had for its subject "Basal Metabolism," *i.e.* the metabolism during complete rest. In his interesting opening address Prof. Cathcart incidentally emphasised the extreme complexity and elusiveness of the phenomena grouped under that blessed word metabolism—facts which are liable to be accorded insufficient weight by biological writers and teachers.

One of the most important features of the Glasgow meeting was the discussion which took place on Friday morning, July 28, in the section of medical sociology upon "Alcohol as a Beverage in its relation to certain Social Problems"—a discussion which stood out in strong relief from most discussions on this much discussed subject from its including moderate and calmly reasoned statements from scientific investigations of recognised status. The discussion was opened with an admirable introductory statement by Prof. Mellanby, of Sheffield, in which he laid down the basic facts regarding the physiological action of alcohol. As a drug it was to be regarded as a narcotic, acting on the cells of the cerebral cortex and slackening its control and discipline over the lower nerve centres. It was as a narcotic drug that alcohol in small doses found its usefulness in human life, dispersing temporarily worries and troubles, and so facilitating bodily functions that were known to be interfered with by anxiety. As a food the value of alcohol in moderate amounts rested on the fact that it is rapidly absorbed and to the extent of about 98 per cent. oxidised so as to set free heat. Experiment showed that as much as 40 per cent. of the heat lost from the body during a given period could be supplied by alcohol, but the practical utility of this was to a great extent neutralised by the poisonous drug action. Under abnormal conditions, however, such as those of Diabetes mellitus, the food value of alcohol in small doses could be utilised to take the place of sugar. Dr. J. T. MacCurdy, of Cornell, speaking as a psychiatrist, emphasised the fact that "the Alcoholic is, before he ever touches a drop, an abnormal person," and also emphasised the great difficulty in carrying out a just

comparison between the two evils of such abnormality finding expression in alcoholism or in some other form of vice or crime. From the purely scientific point of view one of the most interesting contributions to the debate was that from Prof. C. R. Stockard, of Cornell Medical College, which told of his experiments, extending over a long series of years, on the influence of alcohol in causing abnormalities of developing eggs and embryos. His experiments on mammals (Guinea-pig) were of particular interest in demonstrating how heavily dosing the parents with alcohol produces marked effects in diminishing fertility, in increasing pre-natal and early post-natal mortality, and in causing defectiveness of the offspring. If we are justified, as no doubt we are, in extending Stockard's results to man, we are afforded incidentally a fine illustration of natural selection at work in the civilised community—for these individuals that are afflicted with the particular form of "unfitness" that finds its superficial expression in drunkenness are seen to be subjected to a severe process of weeding-out during foetal and infantile life which works in the direction of keeping up the standard of the surviving stock.

It must not be thought that the proceedings of the sections exhausted the activities of the meeting. An admirable "Museum" was got together by Prof. Teacher, while Dr. Dunkerly arranged a microbiological exhibition, which included beautiful series of Leishmania and of Spirochaetes exhibited by Sir Wm. Leishman, and Dr. Connal's series of developmental stages of *Loa loa* in the body of the transmitting fly. Numerous interesting demonstrations were given at the afternoon meetings of the various sections, and the meetings concluded on Friday evening, July 28, with the "popular" lecture—entitled "The Physician—Naturalist, Teacher, Benefactor"—delivered to a large audience by Prof. Graham Kerr.

The gold medal of the Association was presented to the Right Hon. Sir. T. Clifford Allbutt and to Lieut.-Col. A. Martin-Leake at the general meeting on the evening of July 25. The presentations were made by the president on behalf of the association. The medal for distinguished merit was instituted by the association at its annual meeting in Manchester in 1877. The medal is awarded on the recommendation of the Council to some person who shall have conspicuously raised the character of the medical profession by scientific work, by extraordinary professional services, or by special services rendered to the association. On this occasion the medal was in each case accompanied by a testimonial or address stating the grounds of the award.

The Stewart Prize of the Association was presented to Dr. J. C. McVail at the same meeting on July 25. The prize was founded by the late Dr. Alexander Patrick Stewart, who was among the earliest to give attention to sanitary questions and also to distinguish between typhus and typhoid fever. The primary object of the Stewart Prize is to afford recognition of important work already done or of researches instituted and promising good results regarding the origin, spread, and prevention of epidemic diseases.

Broadcasting in America.

MR. A. P. M. FLEMING, manager of the research and education departments of the Metropolitan-Vickers Electrical Co., Ltd., who has been closely identified with the development of radio broadcasting in Great Britain, recently attended a conference of the American Institute of Electrical Engineers at Niagara Falls as a representative of the

British Institution of Electrical Engineers and the British National Committee of the International Electrotechnical Commission. He took advantage of the opportunity while in America to make a close investigation of the position of radio telephony extending over a period of two months, and, in addition, studied the trend of public taste and opinion

with regard to broadcasting and the steps which are being taken by the Government to control radio transmission. He tested a wide variety of makes of receiving apparatus and discussed the methods of working, cost and organisation of broadcasting stations, and obtained a considerable amount of valuable experience which will assist in enabling British manufacturers to avoid the pitfalls into which many American firms have fallen. Mr. Fleming also visited the largest broadcasting stations and discussed the situation with the leading makers, radio engineers and officials.

Since the end of 1920 the broadcasting position in America has been chaotic. Practically anybody—private companies, municipalities, departmental stores, universities, Government offices, newspapers—have been able to set up transmitting stations, the only restrictions being the wave-length, 360 metres, and the power, about $1\frac{1}{2}$ kw. At the present time there are nearly five hundred broadcasting stations in the United States working without reference to each other, except in a few cases of friendly co-operation, with regard to time of operation, type of programme and object of the station. The stations are concentrated chiefly along the eastern states and on the Pacific slope, and no less than twenty stations are in close proximity to New York City. Broadcasting programmes are announced in advance through the press, and much use is made of gramophone records for transmission. The U.S. Government called a conference of interested parties at Washington a few months ago under the chairmanship of Mr. Herbert Hoover, and appropriate working conditions were decided. The passage of a Bill now before Congress will afford the Secretary of the Department of Commerce considerable powers to control and co-ordinate the radio traffic, including broadcasting. The process, however, at this stage is slow, and some time must elapse before the American system is giving the public as efficient service as it is hoped the British system will give from its inception.

The action of the Postmaster-General in restricting broadcasting is viewed with much approval in the States, as affording the most convenient means whereby confusion may be avoided.

During his visit Mr. Fleming saw the principal broadcasting stations in operation, including East Pittsburgh (call sign KDKA), Newark (WJZ), Chicago (KYW), Springfield (WPZ), all operated by the Westinghouse Co., the Detroit Free Press, Detroit News, Federal Telegraph and Telephone Co., Rochester School of Music, etc. From the two Detroit stations, as well as those at Pittsburgh and Chicago, Mr. Fleming broadcasted for the benefit of American listeners the position of radio telephony in Great Britain.

The broadcasting station comprises studios in which the artistes play and sing, transmission rooms, control rooms, green room and offices. Every station differs from others, all being in an experimental stage of development, and each one has points of interest which can be incorporated into English practice. It is estimated that two million radio receiving sets are in use, and during the last two years about 12,500 companies have been incorporated for carrying on radio business. Many of these, however, are mushroom affairs, against which the public has been warned.

The pioneer work in the development of broadcasting was conducted by the Westinghouse Co., of Pittsburgh, which opened station KDKA in December 1920. The Company also immediately placed upon the market a number of receiving sets and a remarkable demand arose. The whole country responded to this new form of entertainment, and the demand created has no parallel in recent years.

The patent situation with regard to radio apparatus, circuits and valves was so obscure and complicated that many of the leading makers might unwittingly have infringed each other's patents, and the pooling of the patents by the principal manufacturers has eased what might have been an extremely difficult situation. The Radio Corporation, a group of radio manufacturers already in existence and interested in communication by radio telephony, was utilised to act as a selling agent. There are, of course, many manufacturers outside this group, but small makers are not permitted to utilise patents for which they are not licensed, their sets consequently being less effective and up-to-date than those of the leading makers. Clearly the "mushroom" companies are unable to indemnify their clients against actions which may take place if basic patents are infringed by the apparatus they make.

One of the most interesting organisations in the States is the American Relay League, a national non-commercial association of radio amateurs who combine to relay friendly messages between amateur stations across the Continent and to protect the interests of amateurs. In this way messages from amateur transmitting stations can be sent over very much longer distances. Under British conditions such work is not possible, as those who hold 10-watt transmitting licenses can only send out messages connected with the experimental work for which their license is primarily intended, but attempts are being made to modify these restrictions. Amateur transmission could not, of course, take place while broadcasting is in progress.

During the hot summer months in America the public is not particularly keen on indoor entertainment, and noises in the receiving set due to atmospheric electrical disturbances are troublesome. The public taste is also changing, and those who have experienced reception last winter are developing a taste for more serious and solid matter than has hitherto been the case. Educational matter and health talks are becoming increasingly popular in programmes. More and more church services are broadcasted, and the improvement in the quality of sermons is helping to fill churches which have hitherto been very thinly attended. Market and stock reports are also sent out, and these are of great importance to farmers, *e.g.* the ruling price of pork in Chicago, obtained by radio, may help a farmer to decide whether to send his hogs to market or not immediately. University extensions and extra-mural lectures are being broadcasted to an increasing extent, and invalids and others ("shut-ins") who are unable to seek entertainment out of doors find radio a great boon.

There is no doubt that radio has come to stay. Its character will change, both through technical improvements and through changes in the public taste, but it is rapidly becoming a permanent part of the national life. It is being used to an increasing extent to send out what is known as "perishable news," to relieve the load on the ordinary telephone and telegraph lines. In this respect the attitude of the press has undergone a notable change. From opposition it has changed to whole-hearted support. Newspapers publish programmes at length, and have radio columns in which expert advice is given to amateurs.

Mr. Fleming is most optimistic as to the future of radio in Great Britain. While British audiences are likely to be more critical than American, with the aid of all that American experience has to offer British broadcasting will establish itself as the best in the world, and the public will find in it a unique and continuous source of entertainment and instruction, full of possibilities of expansion. The develop-

ments which are taking place even now in America are likely to produce far-reaching changes, such as the so-called wired wireless, by which radio trans-

mission is conducted for part of its path by an ordinary wired line. What these developments do, however, must be left for the future to determine.

Third International Congress of the History of Medicine.

THE papers read at this Congress, which was held in London on July 17-22 under the presidency of Dr. Charles Singer, may be classified in four main groups according to their subjects, viz., epidemiology, anatomy, pharmacy, and veterinary medicine. Among the papers on epidemiology special mention may be made of those by Prof. Jeanselme, on bubonic plague in the Middle Ages, in which a relationship between famine and plague was shown; by Dr. Ernest Wickersheimer on the black plague at Strasbourg in 1349, with extracts from a contemporary document; by Miss M. Buer on the decrease of epidemic diseases in the 18th and early 19th centuries, a decrease attributed by her to improvements in agriculture, improvements in house and town planning and the advance in medicine; and an interesting account by Sir William Collins of Sir Edwin Chadwick, the father of English sanitary science. Other papers of epidemiological interest were those of Dr. Torkomian of Constantinople on inoculation against small-pox by the ancient Armenians, of Dr. Belohlavek of Prague on epidemics in Bohemia in the Middle Ages, and of Dr. Neveu of Paris on plague in Tuscany in the fifteenth century.

Perhaps the most interesting contribution to the history of anatomy was the paper of Prof. Wright on Leonardo da Vinci's work on the structure of the heart, in which it was stated that Leonardo was the first to show the exact attachment of the chordæ tendineæ to the cusps of the auriculo-ventricular valves, the first to direct attention to the dilatations of the origins of the aorta and pulmonary valves, the first to note the occasional presence of an inter-auricular foramen or foramen ovale, and the first to describe the moderator band in the right ventricle of the heart. Dr. Donald Campbell made a communication on the significance of the Arabic MSS. of Galen's work on anatomical administration, in which he suggested that the preservation of this work when portions of it were totally lost otherwise indicated that the Muslims did not completely destroy the second library of Alexandria, as is generally supposed. In a paper on the anatomical studies of Descartes in Holland, M. Fosseyeux showed by extracts from contemporary literature that Descartes, who was the grandson and great grandson of medical men, studied anatomy both in the human subject and in animals at Amsterdam, Utrecht, Leyden, and Harlem between the years 1630 and 1638. Other anatomical papers were those by Dr. T. Wilson Parry on the collective evidence of trephination of the human skull in Great Britain during prehistoric times, by Dr. Kathleen Lander on women as anatomists, by Dr. Krumbhaar of Philadelphia on the beginnings of anatomical instruction in the United States, and by Dr. J. D. Comrie on early anatomical instruction in Edinburgh.

In an historical sketch of pharmacy in Great Britain and Ireland, Mr. J. B. Gilmour showed that it was not until the 16th century that any beginning was made with the regulation of the practice of medicine or the sale of drugs, and even down to the 18th century the sale and dispensing of drugs was chiefly in the hands of the physicians and apothecaries. The paper deals successively with the evolution of the pharmacist, the history of pharmacy law, the origin of the Pharmaceutical Society of Great

Britain, pharmaceutical education and science, the protection of professional interests, pharmacy in Ireland, and the history of pharmacopœias and pharmaceutical literature. In his paper on art in the Italian pharmacy of the 15th century Prof. Castiglioni of Trieste stated that at the beginning of the 15th century the practice of medicine was closely associated with that of the apothecary, so that the druggist's shop was often an intellectual centre which served not only as a consulting-room for the doctor but also as a place where books and curiosities were exhibited. Prof. Castiglioni showed a large number of photographs of pharmacy jars from his private collection, illustrating the development of medicine in the 15th century. Mr. C. J. S. Thompson traced the history of "Hiera Picra," a remedy composed mainly of aloes and colocynth, which was first used, according to tradition, in the temples of Æsculapius in Greece and is still sold in the pharmacies of Great Britain and the Continent. M. Buchet contributed a paper on the history of legislation concerning poisons, and M. Fialon described the ancient statutes of the apothecaries of Lyons.

Major-General Sir Frederick Smith gave an interesting description, illustrated by lantern slides, of the position of veterinary anatomy in England during the 16th, 17th, and 18th centuries, in which he emphasised the following points: (1) The comparative absence of information on the subject, in spite of the fact that up to the 15th century practically only the anatomy of animals was studied by students of human medicine. (2) The interest shown by lay writers on a subject in which they were ignorant, but the importance of which in the advancement of veterinary knowledge they fully recognised. These men wrote on the subject and drew on their imagination. (3) The absence of any veterinary school in this country until the end of the 18th century, when one was founded in 1791 with Vial de Sambel as professor. Prof. F. J. Cole of Reading read a paper on Ruini on the anatomy of the horse, a work which, published in 1598, was the first monograph on the anatomy of an animal. Other papers on veterinary medicine were read by Mr. F. E. Bullock on "Mulomedicina Chironis," a compilation of ancient veterinary treatises; by M. H. J. Sevilla on the syndrome of colic in the Greek Hippocratic writings, and by M. Moulé on the history of glanders in Greek and Roman writers.

In addition to the papers on the history of epidemiology, anatomy, pharmacy, and veterinary medicine, communications on various topics of medico-historical interest were read. In a paper entitled "Magistri Salernitani nondum cogniti," Dr. Capparoni of Rome gave an account of a manuscript which he had found in the cathedral of St. Matthew at Salerno, containing the names of thirty-one hitherto unknown medical men from the second half of the tenth to the sixteenth century, most of whom were monks or ecclesiastics of some kind. This discovery confirmed Dr. Capparoni's view that scientific medicine at this period was mainly practised by monks until the papal prohibition in the 12th century to practise medicine outside the cloisters, with the result that the school of Salerno was founded by laymen. In a paper on Dante and Averrhoism in Italy, Prof. Castiglioni discussed the relations of