

### St. Paul's School Field Club

THE fiftieth anniversary of the moving of St. Paul's School from the City of London to West Kensington, on the western border of Greater London, coincides with the opening of the new biological laboratories. The occasion was celebrated at Apposition on July 5, when the Field Club held an exhibition of its work. After the speeches, the display was visited by the High Master, the Governors of the School and many hundreds of boys and parents. The numerous exhibits indicated how wide are the interests of the members, in all branches of biology and natural history. Worthy of special mention were a large number of experiments in plant physiology, an investigation of irregular nutrition in plants (mycorrhiza, saprophytes and parasites), an ecological survey of sea-shore life and a study of heath and moorland associations, with special reference to mosses. Collections were shown of insects, ferns, seaweeds and fresh-water organisms, while a spirometer proved very popular. The Club, which is nearing its fortieth anniversary, has always been a great boon to the naturalists of the School, and in recent years has worked in close co-operation with the Biological Department. A great deal of field work is done, and in the winter, lectures are given by members and others on subjects of which they have made a special study. The Club is exceptionally fortunate in being at the same time within easy reach of the countryside and the authorities at the Natural History Museum, Kew Gardens and the Zoo.

### Harvey and Literature

THE June issue of the *Proceedings of the Royal Society of Medicine* contains a paper read by Dr. D. F. Fraser-Harris before the Section of the History of Medicine on William Harvey's knowledge of classical, medieval, renaissance and contemporary literature. Harvey's acquaintance with classical literature is shown by the fact that his works contain references to twenty-five Greek writers ranging from Thales in the seventh century B.C. to Suidas, who flourished about A.D. 975, and including among others Hippocrates, Plato, Euclid of Megara, Erasistratus, Aristotle and Menander, as well as allusions to fourteen Latin writers from Virgil to Pipinus and Migaldus, including Varro, Terence, Seneca, the elder Pliny, Celsus and Ulpian. Three medieval writers are mentioned by Harvey, namely, Avicenna, Averroes and Albertus Magnus. Of the thirty-two renaissance and contemporary authors whom he quotes, the best known are Jacobus Sylvius, Fracastor, J. C. Scaliger, Fernel, Vesalius, Eustachius, Descartes, De Thou, Sennert, Pecquet, Baillou and Riolan. The only English writer mentioned is Francis Bacon, whose phrase "to enter upon our second vintage" is quoted in *De Generatione*. In the manuscript notes to his lectures, Harvey also cites seven authors whom he mentions nowhere else, namely, Plautus, Horace, Cæsar, Cicero, Vitruvius, Nicolas Massa and Archangelo Piccolomini. Most, but by no means all, of the references are to subjects of biological importance, the exceptions being passages in the Eclogues,

Georgics and Aeneid of Virgil and Terence's *Adelphi*. The conspicuous absence of any mention of Cæsalpinus, whom many Italian physiologists even to-day regard as the discoverer of the circulation of the blood, and of Servetus, in Harvey's writings is attributed by Dr. Fraser-Harris to the fact that all but three copies of Servetus's book had been burned with him at the stake and that Harvey had found nothing of real value in Cæsalpinus's work.

### History of Organic Analysis

PRIOR to the introduction of elementary organic combustion analysis early in the nineteenth century, organic matter was analysed, over a period of nearly two centuries, by dry distillation, the results being expressed in weighed fractions of gaseous part, phlegma, oil and carbon residue, or later as carbonic oxide, carbonic acid, water, empyreumatic oil, acidic fraction, carburetted hydrogen and charcoal. The germ of this method is found in Beguin's "Éléments de Chymie", 1615. Nierenstein (*Isis*, 21, 123; 1934) has shown that there was a period of transition between the old and new methods of analysis, represented by a work of Nees von Esenbeck, Bischof and Rothe, "Die Entwicklung der Pflanzensubstanz", Erlangen, 1819, a rare book which is otherwise of considerable interest in the history of plant chemistry. This contains tables, from which the chemical formulæ may be deduced from the results of distillation analyses, containing 981 'complexions' of the five binary compounds of oxygen, hydrogen and carbon, namely, water, carbonic oxide, carbonic acid, olefiant gas and marsh gas. These tables were the precursor of Richter's percentage tables now widely used.

### Wireless Communication and the Mercantile Marine

THE wireless communications of the mercantile marine are subject to regulations issued by the administrations of the maritime nations, which in turn are governed by the relevant parts of the General Radio Communication Regulations attached to the current International Telecommunication Convention which came into force on January 15, 1933. These regulations lay down the purposes for which the various bands of frequencies may be employed, certain bands being allocated exclusively to the mercantile marine, others to mobile services generally, while some are shared between mobile and other services. A certain amount of difficulty has been experienced in carrying out the communications of the mercantile marine owing to the interference which exists, especially in some areas near the coasts of Europe and the United States. In a paper read before the Wireless Section of the Institution of Electrical Engineers on May 2, Commander J. A. Slee made an analysis of the sources of this interference. Typical response curves of the average ship's receiver were given in the paper, and from these the field strengths of signals which can cause interference in the different sections of the marine communication band have been computed. The analysis dealt with both spark and valve transmitters, and also with the possible interference which

might arise from the large number of fixed beacon stations now in operation for the use of ship direction-finders. Although these beacons are located in a restricted band of wave-lengths, it has proved possible to utilise different modulation note frequencies, and it is considered that as at present organised, mutual interference between beacon stations is negligible.

#### Interference with Broadcast Reception

THE problem of the elimination of the interference caused to broadcast reception by electrical machines and apparatus is of widespread interest and is being studied in many countries. A Conference has been held in Paris recently under the auspices of the Electrotechnical Commission, at which representatives of various international electrical and broadcasting organisations were present. A brief report of the results of this Conference is given in *World Radio* of July 13. It was agreed that no protection need be considered at the present time for the case of a wanted signal strength of less than 1 millivolt per metre, and that the interference should be considered relative to a signal carrier wave of this intensity, modulated to a mean depth of 20 per cent. Under these conditions it was considered desirable, if reception free from interference is to be obtained, that the level of the interference field should be 40 db. below that of the wanted signal. At the present time, it would appear to be difficult and premature to fix a definite, practical value applicable to electrical installations, until further experimental data on this aspect of the problem have been obtained.

ONE of the difficulties accompanying legislation in this subject is the interpretation of the results of measurements of interference obtained by different methods. Three main methods are already in use in different countries for evaluating the relative magnitude of interference, these being known as the French, German and British methods respectively. At the Paris Conference it was agreed that a comparison of these three methods should be carried out in Berlin in October next by a group of five experts assisted by the General Secretary of the I.E.C., with the view of proposing that one of these or some alternative method should be adopted for international use. The British interests in this matter of interference reduction are safeguarded by the Radio Interference Committee of the Institution of Electrical Engineers in co-operation with the British Standards Institution, and these bodies were largely responsible for the success of the recent meeting in Paris.

#### Congrès Préhistorique de France

A CORDIAL invitation to attend the eleventh Prehistoric Congress of France is extended to all archaeologists by its president and officers. The Congress is to be held at Périgueux on September 16-22. A special interest is attached to this meeting of the Congress, as it was at Périgueux thirty years ago that the Congress met for the first time. It had been constituted in the previous year on the proposal of MM. Émile Rivière and Marcel Baudouin,

by the then recently founded Société Préhistorique de France. Its meetings were interrupted by the War and were resumed in 1931. The present session will be the first since that date. Apart from its sentimental interest, the meeting is of importance as taking place in the heart of the classical territory of prehistoric study, in which the evidence for the art and industry of palæolithic man abounds. It is appropriate, therefore, that the Conseil Général of la Dordogne will join with the Municipality of Périgueux in offering a welcome to members of the Congress. The Congress will meet under the presidency of Dr. Felix Regnault. The honorary general secretary and treasurer is M. Charles Schleicher, treasurer of the Société Préhistorique. The arrangements are in the hands of a strong local committee. So far as at present arranged, the subjects to which special attention will be devoted in the communications submitted to the Congress are the palæolithic period in the region of meeting, the mesolithic and neolithic of the Dordogne, and artificial caves and souterrains. The principal sites of interest in the area will be visited and excavations demonstrated in the course of the meeting. Notifications of desire to attend, subscriptions (Membre titulaire, 30 fr., Membre titulaire souscripteur, 100 fr., Membre adhérent, 20 fr.), communications, etc., should be addressed to M. Ch. Schleicher, 9, rue de Verneuil, Paris (vii).

#### Medical Aspects of Physical Culture

AN International Congress of Medicine applied to Physical Education and Sport will be held at Chamonix on September 3-5 under the presidency of Prof. A. Carnot of Paris. It has been organised by Prof. A. Latarjet, of Lyons, president of the International Association of Sport Medicine, as the result of a Congress held at Turin in 1933. The Congress will consist of the following sections with their special presidents: Biology (Prof. H. Laugier), Medicine and Pædiatrics (Dr. Jules Renault), Surgery and Orthopædics (Prof. L. Rocher), Physical Education during and after the School Period (Prof. Chaillet-Bert), and Sport Medicine (Prof. Grégoire). The following questions will be discussed before the united sections: biometrical standardisation of sport, medical control of physical education and sport, and medical indications for treatment at high altitudes. The object of the Congress is to secure the co-operation of biologists, clinicians and sportsmen and to further the scientific and social development of physical education. Further details of the Congress will be published later. The general secretaries are Dr. Godlewski, 14 rue Théodule Ribot, Paris, and Prof. Cordier, 1 rue Childebert, Lyons. The regional secretary is Dr. Agnel, Chamonix.

#### Faraday Society Discussion on Colloidal Electrolytes

A PRELIMINARY programme is now available of the General Discussion on Colloidal Electrolytes to be held by the Faraday Society at University College, London, on September 27-29. Prof. H. Freundlich will deliver an introductory paper, and papers in the remaining sessions will be grouped according as they