

problem is, however, too complex for a sufficiently complete theoretical solution to be possible at present, and the only method is the patient comparison of the pressure variations in each centre of action with the subsequent variations in all twenty centres. This laborious research has been carried out, and the results are presented in Part 9, "A Further Study of World Weather." The quarterly means are compared with those for two quarters before, one quarter before, the same quarter and one and two quarters after, at all stations—some 4000 correlation coefficients in all. From these coefficients 189 relationships are found which are probably significant according to the author's rigid standard, and are of value for seasonal forecasts either six months or three months ahead.

The consistency of the relationships is very remarkable, and "supports the view that seasonal forecasting is capable of wider application than at present." Most of the significant relationships discovered are between the different tropical and sub-tropical centres, at which weather abnormalities usually persist for several months, and the research indicates possibilities for the initiation or improvement of seasonal forecasting in such regions. For countries within the temperate storm belts, such as the British Isles, the outlook is not so hopeful; the significant correlation coefficients are fewer and smaller, and the fluctuations from month to month are often so great that the value of a general three-monthly forecast is limited. The final solution of the problem of long-range forecasting in temperate latitudes will undoubtedly have to take account of world-relationships, but only as giving a general tendency to the weather, the fluctuations of shorter period being determined by other and more local causes.

In Part 10 Sir Gilbert Walker returns to the original purpose of these studies and gives an example of the application of the results to seasonal forecasting in India. From the closest relationships found between rainfall in India and the preceding conditions in other parts of the world, greatly improved formulæ are deduced for forecasting the monsoon rainfall of different districts and the winter precipitation of the Himalayan region. The formulæ impress one very strongly with the meteorological unity of the world, that for Peninsula rain, for example, depending on the preceding conditions in such widely scattered regions as Alaska, South America, and Rhodesia. The statistical basis is sufficiently complete for the forecasts to be made confidently; and while in the story of Indian forecasting, begun fifty years ago, the final chapter is not yet written, we may reasonably believe that the main lines of the plot have been laid bare.

University and Educational Intelligence.

IN the course of an address delivered on September 4 at the opening of a new secondary school at Preston Lodge, East Lothian, Lord Balfour made some noteworthy remarks on the relation of schools to universities and on the importance of research in pure science. If the university is compelled to act the part either of the primary or secondary school its work is hampered, its utility diminished, and its wheels clogged. The purpose of the secondary school is, however, not merely to prepare students for the university, but rather to give an education by means of which those who are unable to go to the university can face life without feeling seriously handicapped. Referring to the importance of the practical teaching of science, Lord Balfour said he was glad to learn that science is to form a prominent part of the curriculum of the new school, and that it is to be taught by laboratory demonstration and experiments. "In-

dustry in the future," he said, "must be based upon science." If industrialists imagine that science can be built up without a disinterested love of knowledge, they fall "into the most grievous blunder." The multiplication of subjects in modern secondary and university education and the specialisation it entails are regarded by some as disastrous to the progress of education and the highest interests of culture and learning. Lord Balfour stated that, if the dangers of specialisation are kept in view, they can be reduced to a minimum, and the necessary flexibility, variety, and complexity of modern education successfully maintained.

THE Geographical Association has been experimenting for some time in the matter of conducted educational tours for teachers under the direction of volunteer experts. Some teachers and members of several universities joined a group of honours students in geography, of the University College of Wales, Aberystwyth, at Easter, in a tour around France, under the direction of Miss S. Harris, of the staff of that College. At the beginning of August, two groups left England to study the Alps; one the western Alps, starting from Chamonix, and one the eastern Alps, starting from Innsbruck. They were under the leadership, respectively, of Mr. J. I. Platt and Miss S. Harris, both of the University College of Wales, Aberystwyth. Among their objects was the demonstration of the newer views of earth history, and especially of mountain building, to which MM. Argand and Staub have given expression in the last few years. The charabanc has made it possible for teachers to intensify their knowledge of Britain, and tours have been organised to various natural regions of England, and to North and Central Wales, to demonstrate structural and general physical features with particular reference to the ways in which these factors have affected settlement, industries and communications. These tours were organised under the leadership of Messrs. E. E. Lupton and V. C. Spary. The Tours Committee of the Geographical Association would like to experiment further by specialising on selected regions for more intensive study if a sufficient number of members and intending members care to take part. All communications concerning tours should be sent to the honorary secretary of the Tours Committee, Mr. E. E. Lupton, 73 Bierley Lane, Bradford.

THE Institute of Intellectual Co-operation, of which the governing body is the League of Nations Committee on Intellectual Co-operation, presided over by a French member of the Committee, is expected to open its doors towards the end of the year. The directorate of the Institute is composed of the following members: M. Bergson, M. de Reynold, Prof. Lorentz, Prof. Gilbert Murray, and Senator Ruffini. The Director is M. Julien Luchaire, Inspector-General of Education in France. The budget for 1926 amounts to 2,100,000 French francs, two millions of which represent the grant made by the French Government and 100,000 that of the Polish Government. The Committee at its meeting of July 27-30 approved of the adoption of an international students' card as recommended by the International Students' Federation. It took note of a memo by Dr. Hagberg Wright, Director of the London Library, on the subject of the international borrowing of books, and recommended a series of practical measures for facilitating such loans. It considered also questions relating to intellectual property, an international meteorological bureau, an international university for the training of statesmen, journalists and others, the unification of scientific nomenclature, and a loan for the development of intellectual life.