

very strong case for a truly international scientific organization which will not exclude Germany and German split States in order "that the German Scientist, still always one of the world's foremost, will not go 'underground'." Still in the same breath the author says, "the resources of the Allies are bringing this war to an end, an end which will place the scientist once again in a very favourable position, as he will remain free in the post-war world, *not in all but in much more than half of the Allied Territory*". To biologists and scientists in general in Allied Territory this statement is disconcerting. Let us not, at any rate, presume that Dr. Verdoorn presupposes that freedom to the scientist is inter-related with freedom in politics! In the matter of International biological collaboration, extending his own argument further, the author quotes from the United Nations Conference on Food and Agriculture that "the natural sciences are a particularly fruitful field for international co-operation because they are themselves international; basic, physic and biological laws are the same anywhere and universally accepted"; but he says, "co-operation demands an attitude which is not typical of the average biologist". There is great deal of truth in this statement as biological research so far has remained very individual. Nevertheless, the cry for team-work in biological sciences has never been greater than to-day when many

biological problems need Applied than Fundamental research. This fact has been very successfully brought out by Dr. Verdoorn. To the thinking biologist the author has given large number of suggestions as to what great quantities of untapped knowledge lay undiscovered and which could be unearthed by improving scientific publications, by instituting abstracting journals, international as well as regional, by truly international societies and commissions for co-operative research and in a host of other ways. The answer to this intriguing question of whether a world federation of biologists will work or not is found in the author's statement, "among biologists all over the world there is a feeling that relations with government (I do not mean any specific political group) should be avoided whenever possible. This may be a sound attitude from the point of view of pure research, from all other points of view it is a mistake. It reveals poor ability to read the signs of the times. Who should know better than the biologist that with the development of organisms their ecology becomes more and more intricate?"

This contribution by Dr. Verdoorn is scintillating reading and is a blunt message not only to the biologist but to the International Scientist. In his own words, "The politician, let us never forget, has to emphasize what divides; the scientist may well emphasize what unites!"

T. N. SADAIVAN.

THE PLACE OF ANGIOSPERM EMBRYOLOGY IN RESEARCH AND TEACHING*

LITTLE that is fundamentally new has been discovered in recent years in the field of descriptive embryology, although many errors and misinterpretations made by previous workers have been corrected and a mass of information added concerning the male gametes, development of embryo-sac, fertilization, endosperm and embryo. In recent years considerable progress has been made chiefly in Europe and America in the field of phylogenetic embryology. The data sifted out from microscopic observations have been made use of in determining the apt positions of certain groups, tribes or families in a natural system of classification. Thus, Empetraceae has come to be placed with the Bicornes, Lennoaceae under Tubiflorales as a separate sub-order, Cactaceae under Centrospermales and Moringaceae (with Capparidaceae) under Rhœdales; the genus *Trapa* which has long been placed under Onagraceae, becomes removed from that family on embryological grounds. Further, some of the embryological characters have been employed to understand the classification within a family as in the case of Liliaceae and Amaryllidaceae. When an exhaustive study of all aspects of embryology of a group or family is made, it would be worth developing an 'embryological formula' for each group or family.

* Abstract of Presidential Address by Dr. P. Maheshwari of the Dacca University, delivered before the Annual Meeting of the Indian Botanical Society held at Nagpur on 3rd January 1945.

From the last two decades a new offshoot, the applied and experimental embryology has emerged out. A thorough knowledge of the sequence of events in the flower is an absolute requisite for success in breeding programme, and in the improvement of crop plants. Though this aspect is still in its infancy, the results obtained till now show a very promising future. It would be very profitable to study in detail the optimum conditions for pollination and fertilization and the effect of X-rays and colchicine on the life-history, the results of which will be highly useful in plant betterment.

In addition to the commonly employed method of serial sectioning in the study of embryology, 'whole-mount' stained preparations which are rendered transparent are of great aid for correct interpretation. Such methods would also facilitate observations of living material under the microscope. A deep, thorough and critical observation alone is capable of bringing out a work of considerable importance; and in teaching, even if the laboratory work makes greater demands upon the energy and resourcefulness of the teacher, this should not be grudged, as through this the young pupil gets such a stimulus for his mental development as is sure to be of use to him ever afterwards in his future career.

In India, with its wealth of Tropical Flora, there is much scope for phylogenetic embryology. There are still several families whose embryological characters are not known or

need amplification. A thorough study of these would make it possible for us to bring out a most exhaustive and up-to-date treatise on embryology, in which each worker will write about his own specialised aspect or group, as literature on the subject is now too vast to be surveyed in a satisfactory manner by any one person. Again, a thorough knowledge of the

ontogeny of the components of the flower from the time of its inception up to the time of dispersal, alone would aid us to eliminate most of the obstacles in plant improvement and it would no longer remain for the breeder to put pollen on the stigma and 'pray' for results in the ovary!

B. G. I. S.

ST. JOSEPH'S COLLEGE, TRICHINOPOLY, CENTENARY CELEBRATIONS

STARTING from humble origins at Negaspatam in the 1844, St. Joseph's of Trichinopoly had grown into a mighty Centenarian by 1944 and this happy event was celebrated in February 1945. Even before the Centenary Week was at hand its jubilant prospects were obvious to all, thanks to the Inter-Collegiate sports and tournaments which attracted immense crowds to the Mahe Grounds. The week following 8th February 1945 witnessed the College and the Hostels attached to it teeming with guests, resident and otherwise. The occasion was also marked by the jubilation of the College Day Celebrations and the revitalisation of the Old Boys' Association.

An Exhibition consisting of the Departments of Mathematics, Physics, Chemistry, Botany and History was organised in connection with the Celebrations. Sir V. T. Krishnamachariar, K.C.L.E., delivering open the Exhibition, referred to his connection with the College and expressed his admiration for the enormous strides advanced by the institution these years. He stressed the importance of Universities in training the future leaders of the country and the necessity "to rethink and replan the system more intimately to the natural balance of human life and human prosperity". With visitors drawn from the public and the student world the Exhibition was open for three days and it was a success both from the academic and from the popular points of view.

The Centenary Meeting, held on 9th February, was presided over by His Excellency the Hon'ble Sir Arthur Hope, G.C.L.E., M.C., Governor of Madras. His Excellency paid a glowing tribute to the services rendered by the College during the past hundred years in the cause of education, irrespective of caste or creed. Rev. Fr. Rector, in his report, briefly traced the growth of the College since its inception, enumerating the hardships it had to go through at the hands of man and God. He also read messages from Sir S. Radhakrishnan, Sir C. V. Raman, Sir C. R. Reddy, Sir Mohammad Usman, the Archbishop of Bombay and the Apostolic Delegate of the East Indies. Khan Bahadur P. Khalifulla Sahib, First Member, State Council, Pudukottah, extended the greetings on behalf of the Centenary Central Organising Committee. Dewan Bahadur T. M. Narayanaswami Pillai, Member, Public Services Commission, Madras, recalled his association with the College and wished it crowning success in the future. After a vote of thanks from the Very Rev. Fr. A. Bonhoure, S.J., Vice-Provincial of Madura, the meeting came to a close.

The distribution of Prizes for the Centenary Inter-Collegiate Sports was held under the presidency of His Highness Sri Brihadambada Raja Rajagopala Tondaiman, Bahadur, Maharaja of Pudukottah. His Highness spoke of the high place that St. Joseph's held in the academic as well as in the athletic fields among the pioneer colleges of S. India.

Realising the dire necessity of a spacious and well-furnished library and a comfortable reading room, the management proposed to institute a Centenary Memorial Library, the Foundation-Stone of which was laid by Mr. D. D. Antony Isar, M.B.E., B.A., LL.B., Administrator, Baghelkhand States Group, Central India.

A social gathering of the Old Boys of St. Joseph's was assembled in the New Hostel Quadrangle under the distinguished presidentship of Mr. Antony Isar. Prof. P. E. Subramania Iyer, Retired Head of the Department of Physics and ex-Secretary of the Old Boys' Association, was also present. Speeches were made by His Lordship the Rt. Rev. P. Thomas, D.D., Bishop of Bangalore, Dr. T. S. S. Rajan, I.R.C.P., M.A.C.S., ex-Minister of Madras, Sri C. V. Narasimhan, M.A., I.C.S., and Sri. Papali, M.A., Ph.D., of H. H. the Maharaja's College, Ernakulam. Rev. Fr. J. D'Souza, S.J., Principal, Loyola College, Madras, proposed a vote of thanks.

The College Day was celebrated with Lt.-Col. Sir A. L. Mudaliar, Vice-Chancellor, University of Madras, in the chair. Dr. Mudaliar referred to the inestimable services rendered by the College in the cause of higher education and remarked that missionary activities are sure to occupy a sound and proper place in the social and educational setting of the India of tomorrow.

On the 11th February a meeting of the Catholic Former Pupils was held in the Lawdley Hall, presided over by His Excellency The Delegate Apostolic of the East Indies, Rev. Fr. Jerome D'Souza, S.J., Rector and Principal, Loyola College, Madras, welcomed the gathering. A congratulatory address was delivered by Rao Bahadur J. C. Ryan, M.A., Joint Registrar of Co-operative Societies, Madras. Mr. Joseph Thalith, M.A., bar-at-law, Retired Chief Justice of Travancore, also addressed the gathering.

A civic reception was accorded to Rev. Fr. Rector in the Municipal Public Hall.

With the Car Procession and a grand Pyrotechnic Display, the Celebrations came to a happy close.