

From each proencephalon is budded off an olfactory lobe or *rhinencephalon*, containing a cavity, the *rhinocoelæ*, and usually divisible into a stem-like portion, or *crura*, and a dilated extremity, or *bulb*.

(e) The mesencephalon becomes differentiated dorsally into the paired optic lobes, or *optencephala*, the cavities of which, or *optocoelæ*, are frequently clearly distinguishable from the remaining median portion of the mesocoelæ, or *iter*, with which they communicate by small apertures, the *pyla*. In many fishes, however, although the optic lobes are well formed, the mesocoelæ shows no distinction into *iter* and *optocoelæ* (cf. Fig 2, B and E). The unpaired ventral portion of the mid-brain, which in the lower forms shows no differentiation into *crura cerebi* may be distinguished as the *basi-opticus*.¹

(f) In the epeucephalon the dorsal region grows out into the cerebellum, or epeucephalon proper, its ventral region, or *basi-cerebellum* (præ-oblongata, Wilder), being usually quite indistinguishable from the metencephalon, but becoming marked off in the Mammalia by the development of the pons. The anterior portion of the fourth ventricle of the adult, *i.e.* the portion corresponding to the basi-cerebellum, is of course epeucephalic and not metencephalic, and may be distinguished as the *atrium* (Fig. 1, C and D; Fig. 2, E): it communicates, in Selachians, with the epicœle proper, or cerebellar ventricle, by a small aperture, the *ostium* (Fig. 2, B and E, *ost.*).²

It will be noticed that a mixture of Latin and Greek names occurs in the above scheme. This has been adopted so as to interfere as little as possible with the names in common use and with those proposed by Wilder. The Latin names, moreover, are introduced with a certain consistency; *e.g.* the basi-cerebrum is the median unpaired portion of the protencephalon, the basi-opticus of the mesencephalon, and the basi-cerebellum of the epeucephalon; similarly, the cavities of these basal regions are respectively the *aula*, the *iter*, and the *atrium*, the main "ventricles" being all distinguished by names of Greek origin.

The advantages claimed for the proposed nomenclature are the following:—

(a) Names are given to important structures which have hitherto been designated by more or less lengthy phrases, *e.g.* basi-cerebrum, aula, mesocoelæ, &c.

(b) The systematic brain-nomenclature of Quain is brought up to date by introducing changes rendered desirable by the progress of animal morphology.

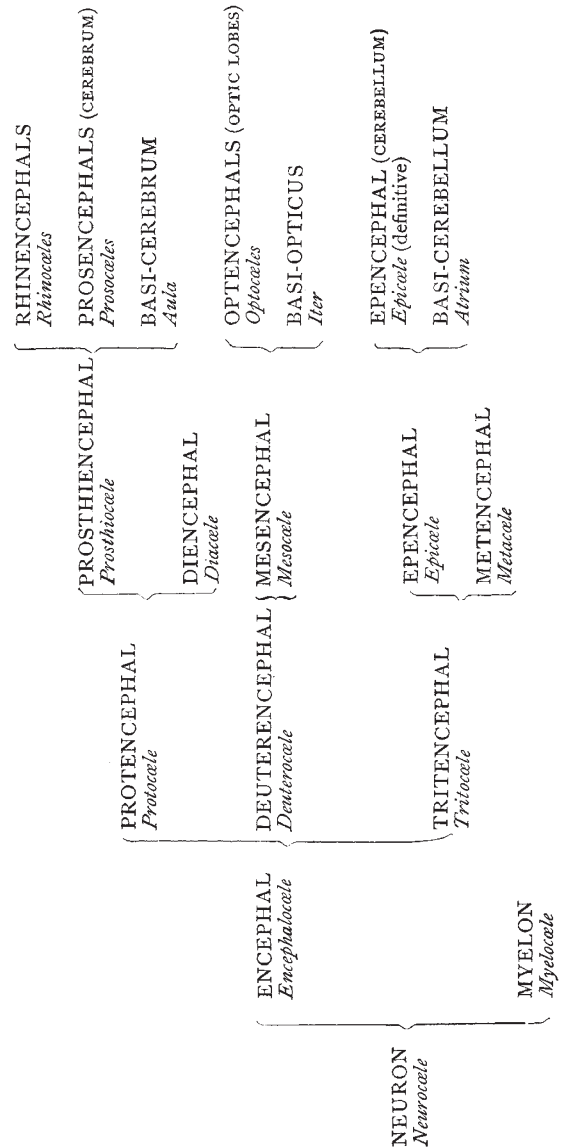
(c) The cavities of the brain are distinguished by systematic names which have an evident connection with those of the encephalomeses themselves, instead of by names which have no relation either with the regions of the brain in which the cavities occur, or with one another.

(d) The description of the nervous system of the lower Chordata is simplified. For instance, in *Amphioxus*, one may say that the neuron shows no distinction externally into encephalon and myelon, but that the neurocoelæ is dilated anteriorly into a small encephalocoelæ.

While agreeing with Prof. Wilder in the advisability of making the changes proposed above in the nomenclature of the central nervous system, I differ from him in failing to see the necessity, or, indeed, the desirability, of making all binomial names monomial. Such names, for instance, as anterior commissure, corpus callosum, lamina terminalis, which are not misleading, and which do not require to be connected with homologous parts by a consistent nomenclature, may very well be left alone; although, if one could start *ab initio*, I quite admit that the substitutes proposed by Wilder might be preferable. In any case, however, his name *pseudocoelæ* is thoroughly deserving of adoption as a substitute for the misleading appellation, "fifth ventricle."

Prof. Wilder's suggestion that *encephalon* should be Anglicised into *encephal* is worthy of consideration, especially as the word ought to be written *encephalos*, and it would be an advantage to get rid of the incorrect neuter termination. I have adopted the abbreviated form in the following table, which shows at a glance the nature of the proposed scheme of nomenclature. The

names of the various divisions of the nervous system are printed in capitals, those of the corresponding cavities in italics.



My object in writing this note is not so much to get my own or any other system of names adopted, as to urge the necessity for a reform in the nomenclature of the central nervous system and its cavities—a necessity which no comparative anatomist, especially if he be a teacher, can fail to see. Recent investigations of the skull, shoulder-girdle, urinogenital organs, &c., of Vertebrates have necessitated corresponding changes in nomenclature, and similar changes are constantly being made among the various Invertebrate groups. It would certainly be a great boon, both to teachers and students, if a like reform could be generally adopted for the Vertebrate nervous system.

Dunedin, N.Z., September 15

T. JEFFERY PARKER

THE IMPERIAL INSTITUTE

THE following is the report of the Committee appointed by H.R.H. the Prince of Wales to prepare a scheme for the proposed Imperial Institute:—

The committee appointed by your Royal Highness to frame a scheme for an Imperial Institute intended to commemorate the

¹ " Critics will no doubt object to using an adjective as a substantive, but how far this is admissible is entirely a matter of usage," &c. (Pye-Smith, *loc. cit.*, p. 174, note).

² *Cerebellum* is one of the few names in the older brain-nomenclature which presents no ambiguity, so that the only reason for giving it a Greek synonym is the logical satisfaction of having a similar set of names for all the great divisions of the brain. Strictly speaking, the word epeucephalon, being synonymous with *cerebellar segment*, ought not to be used for the cerebellum itself, and *hyperencephalon* might be used instead, with *hyperocoelæ* for cerebellar ventricle.

fiftieth year of Her Majesty's reign beg leave to submit to your Royal Highness the following report.

They do not fail to remember that the scheme which your Royal Highness indicated in your letter of September 13 last to the Lord Mayor of London had its origin in the remarkable interest excited by the recent Exhibition, by which not only the material products, resources, and manufactures, but the loyal feeling of the great colonies and possessions of Her Majesty's Empire, were illustrated in a most signal manner.

The object, therefore, which naturally suggested itself first to the committee was the development, with some necessary modifications, of your Royal Highness's idea of creating a permanent representation of the resources and progress of the colonies and India.

On pursuing, however, the consideration of the subject, the committee became persuaded that a memorial really worthy of the jubilee year of Her Majesty's reign could not be confined in its objects to any one part or parts of Her Majesty's Empire, and that it must in some form and degree also comprehend a representation of the United Kingdom.

Their desire, therefore, in the following outline of the scheme which they recommend is to combine in a harmonious form, and with a view to some practical and useful purpose, a representation of the colonies and India on the one hand and of the United Kingdom on the other.

They submit that this object will be best indicated by giving to the memorial the title of The Imperial Institute of the United Kingdom, the Colonies, and India.

They think that the Institute should find its home in buildings of such a character as worthily to commemorate the jubilee year of the Queen's reign, and to afford accommodation suitable for an institution combining the important objects which they now proceed to describe.

It is obvious that several departments of the Institute, such as the hall, conference rooms, &c., which will be found described under the Colonial and Indian Section and the United Kingdom Section respectively, will be common both to the colonies and India and to the United Kingdom: but as others have special relation to a particular portion of Her Majesty's dominions, it will be found convenient to make the following division.

A. Colonial and Indian Section.—The object of the Colonial and Indian Section will be to illustrate the great commercial and industrial resources of the colonies and India, and to spread a knowledge of their progress and social condition.

To this end provision should be made for—

(1). The display in an adequate manner of the best natural and manufactured products of the colonies and India, and in connection with this the circulation of typical collections throughout the United Kingdom.

(2). A hall for the discussion of colonial and Indian subjects, and for receptions connected with the colonies and India.

(3). The formation of colonial and Indian libraries, and establishing in connection therewith reading, news, and intelligence rooms.

(4). The incorporation in some form into the proposed Institute of the Royal Colonial and Royal Asiatic Society, if, as is hoped, it be possible to bring about such a union.

(5). The collection and diffusion of the fullest information in regard to the industrial and material condition of the colonies, so as to enable intending emigrants to acquire all requisite knowledge. Such information might be advantageously supplemented by simple and practical instruction. An emigration office of this character should be in correspondence with the provincial towns, either through the free libraries or by other means, so that information may be readily accessible to the people. These objects would be greatly facilitated if, as may be hoped, the Government should consent to the transfer to the buildings of the Institute of the recently formed Emigration Department, which would, by a close connection with the Institute, largely increase its usefulness.

Facilities might be afforded for the exhibition of works of colonial and Indian art.

It is also considered desirable that means should be provided, not for a general exhibition, but for occasional special exhibitions of colonial and Indian produce and manufactures. At one time a particular colony or portion of the Empire may desire to show its progress; at another time a general comparison of particular industries may be useful. Whilst the permanent galleries would exhibit the usual commercial or industrial products of the several colonies and India, the occasional exhibitions would stimulate and enlist the sympathies of colonial and Indian producers, and

keep up an active co-operation with the industrial classes of this country.

B. United Kingdom Section.—The leading objects of this Section will be to exhibit the development during Her Majesty's reign and the present condition of the natural and manufactured products of the United Kingdom, and to afford such stimulus and knowledge as will lead to still further development, and thus increase the industrial prosperity of the country.

We submit that these objects may be carried out by making provision for the following purposes:—

(1). Comprehensive collections of the natural products of the United Kingdom, and of such products of other nations as are employed in its industries, with full scientific, practical, and commercial information relating thereto.

(2). Illustrations of manufactured products, typical of their development and present condition, of trades and handicrafts, and their progress during the Queen's reign, including illustrations of foreign work when necessary for comparison; together with models illustrating naval architecture, engineering, mining, and architectural works.

(3). A library for industrial, commercial, and economic study, which should contain standard works and reports on all subjects of trade and commerce. It will be desirable also to include a library of inventions of the Empire, and, as far as possible, of the United States and other countries.

(4). Reading and conference rooms supplied with English, colonial, and foreign commercial and technical periodicals, and a fully-equipped map room for geographical and geological reference. The conference rooms would be of value for meetings of Chambers of Commerce and other bodies of a kindred nature.

(5). The promotion, in affiliation with the Imperial Institute, of commercial museums in the City of London and in the commercial centres of the provinces. To these the Institute would contribute specimens, samples, and exhibits of the commercial products likely to be specially valuable in particular localities. There should also be an organisation to connect the Imperial Institute with the provincial centres by lectures, conferences, the circulation of specimens, and other means.

It is hoped that the Institute may lead to the organisation of high schools of commerce, such as are now established in the chief commercial towns of most Continental countries, but which have, as yet, unfortunately no existence in the United Kingdom.

(6). The building will also advantageously afford accommodation for (a) comparing and examining samples by the resources of modern science, and (b) the examination of artisans under the various schemes already existing for the promotion of technical education.

Space should also be provided for occasional exhibitions of separate industries, or of the special industries carried on in great provincial centres: for example, there might at one time be an exhibition of iron manufactures, at another of pottery, at another of textile fabrics, &c., which would tend to stimulate improvement in the different departments of industrial life. This object might be assisted by separate exhibitions of the handiwork of artisans.

The committee, having detailed the general nature of their suggestions under these heads, desire to add that they do not anticipate the exhibits in the collections remaining unchanged. They contemplate that as improvements are made from time to time the later and better results would displace those out of date.

They have had to consider how the space should be distributed between the United Kingdom on the one hand and the colonies and India on the other, and they recommend that whatever portion of the buildings is not required for purposes manifestly common to both should be allotted to the two sections fairly in equal parts.

C. Government of Institute.—The committee recommend that a new body, entirely independent of any existing organisation, should be created for the government of the Institute. This body should be thoroughly representative of the great commercial and industrial interests of the Empire. The colonies and India should have a fair share in the government of the Institute, and each colony should have special charge of its own particular department, subject, of course, to the general management of the entire institution.

The method of carrying this out would be prescribed by the Charter, after full consideration by Her Majesty in Council.

D. Site.—The committee, being fully conscious of the advantage

of a central position for the Institute, have considered the various possible sites, and have, as far as has been within their power, obtained estimates of their cost.

To carry out the several objects which the committee have indicated, a large space is necessary. The committee have been unable to find any such suitable site in the central parts of London, except at a cost which, looking at the probable amount of subscriptions, would, after the purchase of the ground, leave a sum wholly inadequate for the erection and maintenance of the buildings, and for carrying out the objects of the Institute.

The site of about five acres recently secured for the New Admiralty and War Offices is valued at 820,000*l.*, or rather over 160,000*l.* per acre. That now vacant in Charles Street, opposite the India Office, is less than an acre, and would cost at least 125,000*l.*; probably another acre might be secured by private contract, so that the value of a limited site in this position would not be less than 250,000*l.* It has been suggested that a single acre not far from Charing Cross might be obtained for 224,000*l.* Two and a half acres on the Thames Embankment have been offered for 400,000*l.*; and it is stated that six acres might be procured from Christ's Hospital at 600,000*l.* Another good central position has been suggested, consisting of two and a half acres, which has been valued at 668,000*l.*

It is, of course, probable that these sites might be obtained at somewhat less than the prices asked, but, allowing for this, it is obvious that the purchase of any adequate area would involve the expenditure of a quarter to half a million.

The committee have therefore been forced to abandon the hope of obtaining a central site within the limits allowed by any probable subscription.

The attention of the committee was then drawn to the property at South Kensington belonging to the Commissioners for the Exhibition of 1851. This property was bought out of the profits of that Exhibition, with the express object of offering sites for any large public buildings which might be required for the promotion of science and art.

Under these circumstances, the committee submit to your Royal Highness that the Imperial Institute may well establish a claim for the grant of a site of sufficient magnitude on property bought and reserved for public institutions of this character.

Though sensible of the objections that may be urged against the situation at South Kensington, the committee think that the advantage must be obvious of obtaining a sufficient site virtually free of cost, so that the whole of the subscriptions may be devoted to providing a building for and establishing and maintaining the Institute.

The committee, while guided in the recommendation of a site by the considerations they have indicated, think it right to add that there are some incidental advantages connected with that at South Kensington.

In that locality are combined the City and Guilds Technical College, the Royal College of Music, and the Government Museums and Schools of Science and Art, which ought to be in immediate proximity to an Imperial Institute of the character which we have described.

The technical character of the collections and exhibitions of the Imperial Institute has a natural connection with the collections of science and art in the Government Museums.

E. General Observations.—An Imperial Institute for the United Kingdom, the Colonies, and India, would fail in its chief object if it did not constantly keep in view that it ought to be a centre for diffusing and extending knowledge in relation to the industrial resources and commerce of the Empire.

The necessity for technical education is now fully appreciated, because the competition of industry has become, in a great measure, a competition of trained intelligence. The committee, however, do not recommend that the Imperial Institute should aspire to be a college for technical education. Many of the large towns in Great Britain have recently established colleges or schools of science and art. The Imperial Institute might serve to promote technical education in these, and to unite them with colleges of larger resources which have been founded or formed branches for the purpose in the metropolis. It is too much to hope that an active co-operation of this character between the provincial centres and London could be at once undertaken by the Imperial Institute. But the committee bear in mind that, in their last report, the Commissioners of 1851 have indicated an intention to assist in carrying out such a scheme. If the Commissioners would contribute three or four thousand

pounds annually, it would be possible to establish scholarships which might enable promising candidates of the working classes to attend the local institutions, and even, when it was desired, to complete their technical education in colleges of the metropolis. In addition to this aid, the Imperial Institute might be able, in other ways, to promote the foundation of scholarships both in connection with the colonies and provincial centres, in the hope of still further extending these benefits to the working classes.

In conclusion, the committee submit that an Imperial Institute such as they have sketched in broad outline would form a fitting memorial of the coming year, when Her Majesty the Sovereign of this Empire will celebrate the jubilee of her happy reign. It would be an emblem of the unity of the Empire, embracing as it does all parts of the Queen's dominions, and tending to promote that closer union between them which has become more and more desired. It would exhibit the vast area, the varied resources, and the marvellous growth, during Her Majesty's reign, of the British Empire. It would unite in a single representative act the whole of her people; and, since both the purpose and the effect of the Institute will be to advance the industrial and commercial resources of every part of the Empire, the committee entertain a confident hope that Her Majesty's subjects, without distinction of class or race, will rejoice to take part in offering this tribute of love and loyalty. —HERSCHELL (Chairman), CARNARVON, REVELSTOKE, ROTHSCHILD, G. J. GOSCHEN, LYON PLAYFAIR, HENRY JAMES, HENRY T. HOLLAND, H. H. FOWLER, C. T. RITCHIE, FRED. LEIGHTON (President of the Royal Academy), ASHLEY EDEN, OWEN T. BURNE, REGINALD HANSON (Lord Mayor), J. PATTISON CURRIE (Governor of the Bank of England), JOHN STAPLES, FREDERICK ABEL (Vice-President of the Society of Arts), J. H. TRITON (Chairman of the London Chamber of Commerce), NEVILLE LUBBOCK, HENRY BROADHURST.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE

CAMBRIDGE.—At the annual election to scholarships and exhibitions in St. John's College, for candidates who have not yet commenced residence, the following awards were made:—

Foundation Scholarships: (8*ol.*) to A. Vaughan, University College School, and H. Reeves, Surrey County School; (5*ol.*) to O. W. Owen, Liverpool Institute (all for Mathematics); (6*ol.*) to J. T. Hewitt, South Kensington School of Science, for Chemistry.

Minor Scholarships: (5*ol.*) to G. T. Bennett, University College School, and W. J. Dobbs, Wolverhampton School, for Mathematics, and to R. A. Lehfeldt, for Physics.

Exhibitions to J. J. Alexander, Queen's College, Belfast, for Mathematics, and to F. F. Blackman, St. Bartholomew's Hospital, for Physiology and Botany.

SCIENTIFIC SERIALS

THE articles in the *Journal of Botany* for November and December are mostly descriptive. Mr. H. N. Ridley concludes his description of the Monocotyledonous plants collected in New Guinea by Mr. Forbes, including a number of new species; Mr. J. G. Baker, his synopsis of the Rhizocarpeæ, with a monograph of *Pitularia*; and Dr. Trimen, his valuable account of the flora of Ceylon and its relations to the climate of the island.—Mr. J. G. Baker describes some new species of Liliaceæ from the Cape of Good Hope.—The other original papers refer to the distribution of British plants.

Nuovo Giornale Botanico Italiano for October.—G. Venturi describes several species of moss new to the Italian flora, or rare or critical species.—L. Macchiati, on the extra-floral nectaries of the Amygdaleæ, describes nectariferous glands on the leaf-stalk of *Persica vulgaris*, *Cerasus vulgaris*, *Prunus domestica*, and *Amygdalus communis*. These agree in function with the extra-floral nectaries in other European plants, in serving as a protection against the attacks of caterpillars; while in the case of natives of Tropical America, their purpose is invariably to protect against the attacks of the ant *Oecodoma*, by attracting other ants, enemies to this species. The author records a diurnal periodicity in the amount of nectar exuded from the glands, which reaches its maximum early in the morning, its minimum in the afternoon.—B. Scortechini describes several