

called "efficiencies" it is difficult to understand. The consumer is supposed to supply a large extra amount of power at his own cost by burning gas to heat the air, and it seems an extremely evident misuse of the word "efficiency" to apply it to the ratio of the diagram so got to the diagram of the central station engine. By a little more liberal burning of gas, the efficiency obtained by this method could quite easily be made higher than unity. On the same principle we might calculate the efficiency of a steam-engine by taking the ratio of the indicator-card from the steam cylinder to that taken from the feed-pump that supplies water to the boiler, and thus obtain an efficiency of, let us say, 50,000 per cent. This is a *reductio ad absurdum* of the method of calculation which is perfectly legitimate and logical.

R. H. S.

THE CLASSIFICATION OF THE CÆCILIANs

IN a paper on the structure and affinities of the Amphiumidæ, published in the newly-issued part of the Proceedings of the American Philosophical Society (vol. xxiii. No. 123), Prof. Cope has put forward some views as to the position of the Cæcilians or Apodous Batrachians in the Systema Naturæ, which are worthy of careful consideration. The Cæcilians, Prof. Cope observes, are generally regarded as representing a distinct order of the Batrachian class, which bears the name "Apoda," or "Gymnophiona." The definition of this order given by Mr. Boulenger in his recently published Catalogue of the specimens of these animals in the British Museum is: "No limbs; tail rudimentary; males with an intromittent copulatory organ; adapted for burrowing." Of these definitions Prof. Cope maintains that not one is of ordinal value. "The tail in some Cæcilians is distinct. The intromittent copulatory organ in such species as *Dermophis mexicanus*, *Gymnophis proximus*, and *Herpete ochrocephala* is not a special organ, but merely the everted cloaca. The hard papillæ observed by Günther in *Ichthyophis glutinosus* are wanting in the above-mentioned species, and the protrusion of the cloaca is performed by two special muscles."

As regards the absence of limbs in the Cæcilians, Prof. Cope points out that the extremely rudimentary character of these organs in *Amphiuma* is well known, and that their non-existence has no greater claim to be considered as of ordinal value in the Batrachians than in the adjoining class of Reptiles, where it is in some cases not even a "family" character. Looking to these facts, Prof. Cope proposes to unite the Cæcilians with the Urodele Batrachians, and to class them only as a family, "Cæciliidæ," connected with the more typical forms of the group through the Amphiumidæ.

Messrs. Sarasin, who have recently published a most interesting account of their observations on the development of a species of Cæcilian in Ceylon,¹ seem to have come to nearly the same conclusions as to the correct systematic position of this group of Batrachians.

NOTES

THE Prince of Wales has requested the President of the Royal Society to join the Committee appointed to advise on the organisation of the proposed Imperial Institute.

WE have referred elsewhere to some of the possible results of the meetings held last week in favour of the Imperial Institute. Some very striking features which have been developed in connection with this movement during the last week are, first of all, the considerable desire which has been evinced to enrich various localities with some Jubilee memorial, and, again, the wisdom

¹ "Ueber die Entwicklungsgeschichte von *Epiorium glutinosum*," Arb. Zool. Inst. Würzburg, vii. p. 292 (1885).

generally displayed in selecting worthy local objects, such as museums, improved science schools, and the like. All this of course is admirable and entirely to be applauded, but believing as we do that there is a possibility of the Imperial Institute, if properly conducted, doing more good for the future development of science and commerce in Greater Britain than any other single organisation can possibly effect, we hope that it will not be starved in favour of merely local objects. We hear that the women of England have already subscribed a noble sum. This no doubt Her Majesty will hand over to the Institute, if it is organised so as to command the confidence and respect of the various leaders of opinion in this country and in the colonies.

MANY of our readers will attach much importance to Colonel Donnelly's letter, which appears in another column. A large increase in the number of students anxious to enter the Normal School of Science and Royal School of Mines was of course to be expected, and we are glad that this influx has induced the department to take steps to increase the accommodation, and at the same time to insist upon one of the best possible forms of entrance examination; a strict inquiry, namely, into the educational history of each candidate for admission.

THE Norwegian Government has presented a Bill to the Storting for fixing a standard time for the whole of Norway. The standard time proposed is Greenwich time *plus* one hour.

MR. W. BALDWIN SPENCER, Fellow of Lincoln College, Oxford, has been appointed to the Chair of Biology in the University of Melbourne, and will leave England in about three weeks. Mr. Spencer distinguished himself lately by his important memoir on the pincel eye in lizards.

A NUMBER of eminent men of science have addressed a memorial to the President, Vice-Presidents, and Council of the Royal College of Surgeons of England, suggesting that the legacy bequeathed to the College by the late Sir Erasmus Wilson might with advantage be devoted to the establishment of an institution having for its object "physiological and pathological research." It is pointed out that the want of such an institution in England has long been felt, and more especially of late, when we have had to look to Berlin for information respecting tubercle, and to Paris for experiments on the prevention of hydrophobia. That the Government will do anything in the matter no one is so sanguine as to believe; and it is hardly more probable that the want will ever be supplied by public subscription. There is, therefore, much to be said for the present proposal, and the authorities of the College of Surgeons will, no doubt, give it due attention. It seems strange that in London there should be nothing like the splendid laboratories which exist not only in the capital cities of Europe, but in comparatively small German towns, such as Bonn, Strasburg, and Leipzig.

UNIVERSITY COLLEGE, Liverpool, has reason to congratulate itself on having some remarkably generous and enlightened friends. On Tuesday last it was announced at a meeting of the College Council that Mr. Thomas Harrison, shipowner, of Liverpool, had endowed the Chair of Engineering with 10,000*l.* Only a few weeks ago Sir Andrew Walker, also a citizen of Liverpool, gave 15,000*l.* to build Engineering Laboratories.

ON Thursday last the honorary freedom of the City of London was conferred upon Mr. H. M. Stanley, in recognition of his services as a traveller and explorer in Africa. The presentation was made at a special meeting of the Court of Common Council in the new council chamber at the Guildhall. The City Chamberlain, in making the presentation, referred to "the remarkable development of journalistic enterprise during the Victorian era," observing that Mr. Stanley was the first member of "the