synonym of *Echinostoma bursicola* (Creplin, 1837) nec Looss, 1899.

In order to straighten out the synonymy immediately, I here propose the name *Echinostoma africanum*, nomen novum, as substitute for *E. bursicola* Looss, 1899, nec (Creplin, 1837) Stiles, 1901.

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AMATEURISM AND MENTAL INERTIA IN PUBLIC SERVICE.

In a striking presentation of the results of 'Official Obstruction of Electric Progress' in Great Britain, by Professor J. A. Fleming, in *The Nineteenth Century* for February, that distinguished writer and scientific authority describes the outcome of the existing system of public service in Great Britain in the departments of telegraphy and telephony and the relative retrogression of that nation in all departments of electrical engineering. "In reviewing the nationality of those who have thus helped to make the electric current the humble servant of mankind, it is impossible not to be struck with the fact that British names do not preponderate."

In pure scientific research, Great Britain has held her own; in detailed improvements and minor advances she has not been backward; but has made no fundamental invention or discovery, except, perhaps, those 'of Lord Kelvin in submarine telegraphy, of Mr. Swan in electric lighting and of Professor Hughes in telephony'; practically all first-rate novelties have originated in other countries, for a generation past. The reason is attributed largely to the fact that in 1870, just at the dawn of the period of electrical activity, the Government set itself up in business as an electrician and proceeded to create a gigantic Government monopoly in one large department of electrical invention which has exercised a most undoubted control over the supply and demand for invention in a wide area of electrical work. It invested £10,000,000 in telegraph purchases, made the business a monopoly, and thus smothered invention through that monopoly and an always characteristic governmental inertia, an inertia, misnamed conservatism, always to be observed where, as in such cases, the alertness in effecting improvement and in competition which characterizes private business for private profit is absent. This 'conservatism' is seen in all departments of the public service and is liable to produce serious retrogression in every national enterprise and in all countries. It was also illustrated, according to Professor Fleming, in the case of the telephone. No sooner was this extraordinary invention made practicable than the British Government, even without explicit authority of law, compelled its proprietors and promoters in that country to pay tribute to the Postal Department, and to-day, while the postal service and the telephone are conducted at a loss, the telephone is made to contribute, without substantial return to its proprietors, the amount of £130,000 to the profit side of the postal service ledger; while the official service of the telegraph, too largely amateur, brings in a loss of over £220,000. The National Telephone Co. has paid into the treasury of the postal service over a million of pounds, since its capitulation to that service, as a 'tax on a new industry barely twenty years old.' The higher tribunals have never confirmed this act of piracy, as it is considered by the members of the company.

As this writer states: "The whole behavior of the post-office towards private enterprise in telephony in the last twenty years has been marked by inconsistency, inaptitude and want of prevision." The business which it itself conducts is a source of enormous loss; that which it simply taxes and burdens pays a sufficient profit to bear this invidious taxation, to which other industries are not subjected. It is a fair presumption that, were the telephone managed directly by the Government, it would exhibit a lack of thrift and efficiency similar to that characterizing the postal and the telegraph business. Meanwhile, also, the postal service deliberately impedes the telephone management in its endeavors to secure rights of way, and compels it to charge the public a much higher tariff than would be fair and practicable were it not discriminated against in taxation, and thus its range is restricted as well as its value to those who are able to secure its service. In all ways the hope of reward which is the

great stimulus of the inventor and of the promoter of new improvements is repressed. The conclusion of the writer of the paper referred to is: "The most effective method of afflicting any department of applied science with creeping paralysis is to constitute it a government monopoly."

While the State electricians would probably declare that they are 'ever on the outlook for new things,' the record is shown to invalidate that claim, at least to the extent of showing that the new things have come vastly more certainly and promptly to the private management. Inventions have been extensively exploited by private means and private companies far in advance of any governmental action, and the inventor proverbially dreads the necessity of going with his plans to a governmental department in all countries and whatever his field of work. Even the inventor of the apparatus of war has his bitter experiences with the official, and the history of the work of Maxim and of Broadwell still earlier, among our own great inventors, may be added to the examples quoted by Fleming, of Morse, of Trowbridge, of Marconi and others. Government officials do not always cordially and sincerely strike hands with the inventor, even where competent to appreciate his work, and it is too often the fact that they prefer to hold him at arm's length until one of their own caste or a partner in invention can find ways of evading his claims and of reaping the harvest he has sown.

"The State officials guard a monopoly. It is in their power to take or reject improvements. They set the pace in one large department of electrical invention and it cannot be forced." As Mr. Edison said to Professor Fleming when the latter explained the nature of these governmental impediments of progress in electrical development: 'Why! They've throttled it!'

In electric traction the same difficulties are interposed, in appropriate ways, by the official brakesmen. Great Britain has to-day about 400 miles of track; the United States has 12,000 or more. In that country any local government may take away the property of any tramway within its limits, at the appraised value of its real property, after twenty years of service. This provision of law has crippled the enterprise. 'To tell an investor in tramway stocks that, after passing through a long non dividend-paying period, he has then the prospect of having his property taken from him at a breaking-up price, and perhaps half his property confiscated,' is to warn him not to invest. Thus the business languishes and the builder of even the comparatively promising railways about London must come to the United States for all his material and machinery.

Scientific education is looked upon as one element of the needed radical reform. But "What is required is not abundant mediocrity, but a fully sufficient opportunity of training those who will be captains of industry. The persons who need technical education are the masters much more than the men."

Throughout the whole article, of which we have here presented so extended an abstract, the evidence is strong that the dangers of that amateurism and of that officialism which are now beginning to awaken intelligent men, and especially men of science and men of applied science in the United States, to serious apprehension relative to all public services involving scientific work or development, have secured a firm and dangerous hold in Great Britain and constitute undoubtedly one of the elements of that apparent relative retrogression in the industries which has of late attracted so much attention and awakened such earnest discussion in the scientific and technical journals, and even to some degree in the columns of the 'Thunderer' itself. The republication, by the Harpers,* of letters to *The Times* from a British engineer visiting the United States, furnishes and preserves an interesting and instructive commentary upon these facts.

R. H. THURSTON.

MUSEUM METHODS ABROAD.

THE appearance of the eleventh annual report of the Museums Association, of Great Britain, reminds one that it is as nearly as possible eleven years ago that the Association of American Naturalists decided that so far as museums were concerned nothing remained for

* 'American Engineering Competition.' New York and London, Harper and Brothers. 1901. 8vo. Pp. 139.