SCIENCE

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MSS. intended for publication and books, etc., intended for review should be sent to the responsible editor, Prof. J. McKeen Cattell, Garrison-on-Hudson, N Y.

THE UNITED STATES FISH COMMISSION.

ACCORDING to law the United States Fish Commissioner must be a man of 'proved scientific and practical knowledge of the fishes of the coast.' If President McKinley judges that Mr. Cleveland violated the law in appointing to the position the cousin of a prominent Democratic politician, having no previous scientific knowledge or practical experience in the work, retired from the navy owing, it is said, to rheumatism, aggravated by sea air, and if further the incumbent has not during the past two and a-half years acquired 'scientific and practical knowledge of the fishes of the coast,' then it is the President's duty to remove the present Commissioner and make a new appointment according to the requirements of the law.

We think that the President could best secure information on the subject by appointing a committee of men of science to make a report on the conduct of the Fish Commission during the past two and a-half years. The National Academy of Sciences is the legal adviser of the government on scientific questions, and a commission consisting of President Gibbs, Mr. Agassiz and President Jordan could make a report, the

conclusions of which would be final. It is our belief that freedom of thought and action and permanent tenure of office are so important for the advancement of science that no scientific officer, whether of a university or under the government, should be removed except on the ground of incompetence publicly proved.

President McKinley may, indeed, judge that incompetence in the present Commissioner has been publicly proved by his record prior to his appointment and by his conduct of the Commission, and if he has reached this decision it would be hard to question its justness. The appointment was unfortunate, as is admitted by every one; and while the Commissioner has since learned somewhat of the practical work of hatcheries, it does not appear that he is willing to take scientific advice in regard to the conduct of the Commission. It must also be remembered that the education of the Commissioner, as far as it has progressed, has been very expensive, costing the government perhaps as much as to train a hundred young men until they were competent to fill the position.

Apparently the efforts of the Commissioner have hitherto been directed to collecting the largest possible quantity of eggs in order that he may announce the numbers in his annual reports. Thus the last annual report states that 128,000,000 lobster eggs have been collected during the year, being an increase of 46,000,000 over the numbers for 1895. We are not, however, told how many of these eggs were killed at the hatcheries, and the Commissioner is probably not aware that in taking the eggs from the hen lobster he materially interfered with their chances of survival. Scientific research has demonstrated that the lobster in berry, whose capture is prohibited by law, can care for the eggs far better than would be possible in any hatchery. To collect them as is done is analogous to taking all the babies born in New York City and depositing them in a baby farm. It is true that much might be accomplished by collecting the eggs in regions where they are abundant and depositing the young where the lobster has been nearly exterminated; but the Commissioner states explicitely 'that he believes in following nature as closely as possible, by depositing the young on the ground from whence the eggs are taken.'

Even at present the Fish Commission is performing a useful work in some directions, such as the distribution of shad fry, with results that more than repay the entire expense to the government of the Commission. But it is now living, not on income, but on capital. The scientific knowledge of the development, life histories and habits of fishes acquired when the Commission was directed by Baird, by Goode and by MacDonald is being used, but not increased. The efficiency of the hatcheries and of methods of distribution cannot be advanced or even maintained, and it is impossible to extend the work in needed directions, as to the oyster. It would be ignoble to depend on the work of foreign nations and investigators, even were it directly applicable to the conditions of our coast. But, indeed, the present Commissioner has not the knowledge to 'convey' what he cannot

earn. It is reported that recently, when he claimed that the station at Woods Holl was the greatest biological station in the world because it hatched the largest number of fry, he was reminded of the Naples station, but replied that he had not heard of it.

The station at Woods Holl, made by Baird, Goode and MacDonald a center of research, fruitful in practical applications, regarded as a model by other nations, has now fallen into disrepute. The institution has been practically closed to investigators. The present Commissioner is apparently unable to appreciate what such a station means and what great practical benefit might proceed from it. Scientific research and the applications of science are but the obverse and reverse of the same coin, and he who expects to do without one side of the coin will find that he has none left in his pocket.

Now since the Coast and Geodetic Survey has been reformed by the present administration, only the Fish Commission needs its attention. When Mr. Cleveland was Governor of New York he vetoed the bill for the continuation of the Geological Survey of the State, and when President he occasionally showed that he had too long postponed his university training. The present administration is, however, in full sympathy with the scientific departments of the government, and is competent to decide whether the present Commissioner meets the requirements of the law, and, if not, to appoint a Commissioner of 'proved scientific and practical knowledge of the fishes of the coast.'

THE NATIONAL ACADEMY OF SCIENCES.

THE autumn meeting of the National Academy was held this year in Boston, beginning at 11 a. m. on Tuesday, November 16th, and continuing until Thursday afternoon. The attendance of members was unusually large for an autumn meeting, about thirty being present at one time or another during the three-day session. The absence of some members residing almost within sight of the place of meeting was a noteworthy indication of a lack of great interest in the leading scientific organization of the country. The program of papers offered was also unusually long and varied, nearly every department of science being represented. While all of these contributions were valuable and taken together represented a large amount of original investigation, none could be considered as unusually or unexpectedly important or strikingly novel in character or results.

The session opened with Professor Woodward's paper on 'The Mass of the Earth's Atmosphere.' The general conclusions of interest were that the radius of the atmosphere was probably five or six times that of the earth, and that while its mass could not exceed five per cent. of that of the earth it was probably not more than one millioneth as much. Professor Carl Barus presented the result of further studies of the effect of time on the temper of steel, the beginnings of which he had published some years ago. The lapse of years has served to bring out more clearly the interesting and important secular changes, the recent measurements having been made on the same specimens used in the earlier stages of the investigation.

This paper was followed by that of Dr. Mendenhall on 'Steel Knife Edges,' which was also a continuation of researches communicated to the Academy at previous meetings. The present investigation