

ment. There is, in fact, strong presumptive evidence that she became his wife nine years previous to his unlooked-for death in 1715. The position, it is true, was never explicitly claimed by or for her; but silence might easily have been imposed by the inferiority of her social position. At any rate, a letter written by Newton to his kinsman, Sir John Newton, May 23, 1715, admits of but one interpretation. It includes the following sentence:—"The concern I am in for the loss of my Lord Halifax, and the circumstances in which I stand related to his family, will not suffer me to go abroad until his funeral is over." No "circumstances" existed which could possibly explain this allusion save one—that of a marriage between the deceased nobleman and the writer's niece. The words are used with no purpose of disclosure; they treat the fact they bear witness to as a known and indisputable one—known, that is, to an inner circle, where Catherine Barton moved all her life with the respect due to an unblemished character. Handsomely provided for by the will of Lord Halifax, she married, in August 1717, John Conduit, M.P., Newton's subordinate, and afterwards his successor at the Mint, and died in 1739, leaving an only daughter, ancestress of the present Earl of Portsmouth.

A considerable amount of elucidatory information regarding the marriage-laws and social usages of the last century adds to the value of the little work edited by Mrs. De Morgan.

*Numerical Examples in Heat.* By R. E. Day, M.A. (London: Longmans, Green, and Co., 1885.)

THIS is not merely a collection of numerical examination questions with the answers attached, but a well-arranged series of problems grouped under twenty-five heads, each beginning with simple questions, which increase in complexity. At the first introduction of every kind of question the answer is worked out in full, with a sufficient explanation to show the meaning of the operations. Other questions are given with their answers, but without the process of solution.

#### LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

[The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to insure the appearance even of communications containing interesting and novel facts.]

#### Note on Sonnet to Pritchard

In the general theory of algebraical forms there are two modes of defining an Invariant or Reciproquant. In the one mode either of them is regarded as subject to satisfy a partial differential equation—in the other as subject to extinction under the action of a partial-differential operator. Of course the difference between these two modes is one of presentation merely, and not of substance. Nevertheless it was interesting to me to observe that the very same rival concepts of equality and extinction lie at the root of the admirable investigations simultaneously carried on by Prof. Pickering at Harvard (who works by equation of light), and Prof. Pritchard at Oxford (who works by the method of extinction), which have earned for each of them the distinction of the award of the gold medal of the Royal Astronomical Society. I say the gold medal, because the medal to each is to be regarded in a transcendental sense as only one to both.

This reflection added to the sentiments of regard which I entertain towards my Savilian colleague caused me to write the sonnet in his praise, which you have done me the honour to insert in NATURE (April 1, p. 516), in which, owing to my own inadvertence the words *name* and *praise* have got interchanged. Being desirous that this tribute of unaffected admiration towards the subject of it should be affected with as few blemishes as are compatible with the feeble versificatory powers of its author, I request to be allowed to say that the first and last lines should read—

*Pritchard! thy name is lifted to the skies,*

and

*Thy praise shall flourish in immortal song,*

respectively. Also that the third and fourth lines should run thus—

*To note each ray that gilds the hem of Night  
Or eye her jewelled brow with keen surmise.*

At the dinner of the Fellows of the Royal Astronomical Society on the evening of the public presentation of the Medal to Prof. Pritchard, the sonnet was recited by its author at the desire of the Astronomer-Royal, who presided on the occasion.

J. J. SYLVESTER,

Savilian Professor of Geometry in the University of Oxford; and Author of "The Laws of Verse"

#### Fishery Board of Scotland

YOUR leading article of the 1st instant, headed "A Fishery Board for England," contains several inaccuracies with regard to the Fishery Board of Scotland which it appears desirable to correct.

(1) "If a Fishery Board is useful and valuable, it is a surprising fact that Ireland and Scotland have long enjoyed an institution which is wanting in England."

The present Fishery Board for Scotland was constituted only in 1882. Prior to that date there was a Board of Fisheries which, from its origin in 1808 until 1820, confined its attention to the curing and branding of herrings, and to collecting statistics of the quantities of herrings landed and exported. From 1820 to 1881 statistics of the cod and ling cured were also prepared. This Board of Fisheries having charge of all the fisheries around the coast of Britain, appointed officers at the chief Scottish and English fishing ports, two of whom were stationed in London, from which in the beginning of the century large consignments of herring were sent to the Continent. In course of time the number of herrings cured at the English stations became so small that in 1850 the English Fishery officers were dismissed. In fact, the old Fishery Board existed chiefly in order to collect statistics of cured fish and to superintend the curing and branding of herrings. It will be understood how exclusively attention has been devoted to these objects when it is mentioned that even now the Fishery officers must be practical coopers.

(2) "The Commission for the Investigation of the German Seas is composed of distinguished men who are students and teachers of biology or physics. In Norway and Holland the same thing occurs."

We believe it is a fact that neither the Norwegian nor the Dutch Government has yet instituted Fish Commissions.

(3) "A large number of matters connected with the fisheries have not yet begun to receive attention even in Scotland."

It was only in 1883 that the Scottish Fishery Board obtained from the Government a sum of 300*l.* for studying the life history, &c., of the food-fishes, and the total sum received up to the end of last month was only 2800*l.* When it is remembered that a sum of 10,000*l.* has been required to found the laboratory of the Marine Biological Association, it can scarcely be deemed a matter of surprise that many topics of interest and importance have not received from the Scottish Fishery Board that degree of attention which they deserve.

(4) "The spawn of the sprat is still entirely unknown."

Mr. Duncan Matthews, of the University of Edinburgh Zoological Laboratory, in his "Report on the Sprat Fishing during the Winter of 1883-84," published in the Report of the Fishery Board for Scotland for 1883, describes and figures the "spawn" of the sprat.

(5) "The Scottish Fishery Board is about to try an extensive experiment with regard to beam-trawling, prohibiting that method of fishing in certain defined areas. The experiment is worth trying, even at the cost of temporary inconvenience to the fishery industry. But in order to render such an experiment fruitful, it would be necessary to make a detailed and exact investigation of the areas selected. It is doubtful whether the organisation of the scientific department of the Scottish Board is yet in a position to make this investigation in a sufficiently complete manner."

Seeing that he appears to speak as one having authority, and not as the scribes, it is gratifying to note that the writer of your article deems "the experiment worth trying." We have only