

playing, there is no question for instance that a succession of notes, G, G sharp, A and a succession G, A flat, A, are musically distinct, and that each actual sound on the piano is a symbol used to stand in turn for many musical entities. The reformed method would destroy the signs of some of these distinctions and reduce playing at sight to striking a succession of notes with little chance of prevision of the musical meaning.

As to the reformed keyboard there is again an obvious material if no clear ideal loss. However the judgment that the simplification of "physiological reflex" is of much value might be demurred to. One can conceive a psychologist taking the stand that a reflex is a reflex, and a musician saying that he had established the reflexes and forgotten the process. Finally we might have a violinist objecting to the pianist borrowing his G clef and returning it in a damaged condition, for advantages on the keyboard would be disadvantages on the fingerboard where the hand covers an octave diatonically and the accidentals are made by a special finger movement.

If musicians should bring forward these matters it must not be inferred that they are opposed to reform. On the contrary most of them desire it but can not meet the bill. The piano is no worse off than other instruments, probably better. A tenor trombone player in the ordinary week's work may have to read from music written in six or seven different systems, but the world rarely hears his complaints.

R. P. BAKER

IOWA CITY, IOWA

MIRAGE AT SEA

TO THE EDITOR OF SCIENCE: In the Sections reports of the meeting of the B. A. A. S., Bristol, 1875, p. 26, M. J. Janssen gave a brief summary of his observations and conclusions with regard to mirage at sea. As this happens to connect with a phase of low sun phenomena in which I am interested, and as I find no trace of any further publication by him, I would be glad to receive informa-

tion as to whether he published further on this subject.

WILLARD J. FISHER

WOODS HOLE, MASS.

THE SIDEWALK MIRAGE

TO THE EDITOR OF SCIENCE: My first experience with the sidewalk mirage described by Professor McNair in your issue of August 27, was on a smoothly paved straight-away between Canton and Alliance, Ohio. The time was three o'clock P.M. of a very hot day in August, 1918, the temperature being just about 100°. We were headed east on a level stretch, while about a mile ahead of us on a slightly higher level was a car apparently submerged in water to a depth of about two feet. A woman crossing the roadway was "in" up over her knees. As none of our party had ever seen such a reflection we got out of the car lest it might be caused by the windshield. At first the vision was lost until we discovered that the angle of vision was so small that we had to hunt for it, when it remained clear and distinct as long as we had the time to watch it.

Since that time I have seen a number of similar reflections, some in warm weather and others in cold; which leads me to conclude that heat is not necessary to produce them. The distance appears to govern the height from the ground as I have seen one within a distance of a square and it was within two or three inches of the surface. The surface reflection mentioned by Mr. Platt in your issue of September 27 is not uncommon, but could never be mistaken for the mirror-like surface of the mirage after you have seen a real one. Such explanations as I worked out in 1918 were upset the following winter and I shall watch with interest for further information that may be offered.

C. P. DU SHANE

A RAINBOW AT NIGHT

TO THE EDITOR OF SCIENCE: About 11 P.M. on Thursday, November 18, while waiting for a street car, I saw a clearly defined rainbow—a phenomenon which is possibly of sufficiently rare occurrence at night to be of interest to some of your readers.

A drizzling rain was falling overhead, but

stars were shining brightly to the north. The moon, which was very low in the west (about 15° south of west, with an altitude of some 5° or 6°), was hidden from view by buildings, where I stood; and, because of the street lights, I was not even aware that the moon was out until the rainbow in the east caught my eye. None of the prismatic colors could be detected, the bow being merely a yellowish arch of light very well defined at the southern end—rather an odd thing to see at that time of night.

FRANK L. GRIFFIN

REED COLLEGE,
PORTLAND, ORE.

SCIENTIFIC BOOKS

Gli Scienziati Italiani, dall'inizio del medio evo ai nostri giorni. Repertorio biobibliografico dei filosofi, matematici, astronomi, fisici, chimici, naturalisti, medici, e geografi Italiani. Diretto da ALDO MIELI, e compiuto con la collaborazione di numerosi scienziati, storici, e bibliografi. Vol. I., Parte I., Rome, 1921. Pp. viii + 236. A. Nardecchia, publisher.

In the issue of SCIENCE of August 30, 1919, pp. 213–214, I called attention to Italian activity in the field of the history of science, evidenced by the new publication *Archivio di Storia della Scienza*, edited by Aldo Mieli, which journal has now completed its first year. The present work indicates the continued and growing interest in Italy in the history of science.

The first part of this biographical dictionary presents the biographies of thirty-three Italian scientists from the fifteenth to the present century. The list of contributors to the volume shows that the great scholars of Italy are devoting themselves to assure the success of the present work under the able editorship of the distinguished historian of science, Aldo Mieli.

One peculiarity of the work is that neither chronological nor alphabetical order of treatment is pursued in selecting the scientists included. Eventually, of course, the completed work will be provided with all necessary in-

dices. Each volume includes also the alphabetical index of names.

The order of treatment of each biography consists of the following: Life; Works, including a critical discussion of the historical and scientific significance; Bibliography, including complete catalogue of all works, with place and date of printing of published works, editions, and translations with precise bibliographical descriptions and also some statement of location in Italian libraries of volumes mentioned; Literature, giving lists of works which discuss the work or life of the scientist in question.

The mathematician will welcome the fine biographical statement (pp. 4–12) concerning Leonardo Fibonacci, written by Gino Loria; the astronomer will appreciate the excellent account (pp. 45–67) of Schiaparelli, by Elia Millosevich; the geographer and the astronomer will find much of interest in the account (pp. 101–111) of Giovanni Antonio Magini (1555–1617) by Antonio Favaro, who lists no less than 47 printed works (and editions) by Magini; the student of medical history, the botanist and naturalist and the physicist will enjoy a whole series of illuminating articles. Particularly noteworthy is the fact that a photograph and a facsimile of handwriting is given of each scientist, wherever possible.

This publication promises to be a work comparable only to the English Dictionary of National Biography; for America, France or Germany there is no work of this nature. When completed on present plans libraries will find it as indispensable as the above mentioned dictionary.

With the present state of exchange the price of 45 liras for Part I., viii plus 236 pages, is extremely low. Every effort should be made by American scientists, historians, and librarians to encourage the continuation of this publication on the present scale. The effective way to do this is by subscription to the publisher, A. Nardecchia, Via dell' Università 11–14, Rome, Italy.

The alphabetical list of articles follows: Acri, Francesco (1834–1913), philosopher, by E. P. Lamanna.