

British medical journal, in which, while blowing out a match, the patient's breath caught fire with a noise like the report of a pistol, which was loud enough to awaken his wife. One evening, while a confirmed dyspeptic was lighting his pipe, an eructation of gas from his stomach occurred, and the ignited gas burned his mustache and lips. In Ewald's book on indigestion, the analysis of the gas in one of these cases was, carbonic acid, 20.57; hydrogen, 20.57; carburetted hydrogen, 10.75; oxygen, 6.72; nitrogen, 41.88; sulphuretted hydrogen, a trace. The origin of these gases is undoubtedly the undigested food, which in these cases undergoes decomposition.

— Dr. Gilles de la Tourette finds that the average step of men is twenty-five inches; for women, twenty inches. The step with the right foot is somewhat longer than that with the left. The feet are separated laterally in walking about four and one-half inches in men, and five in women.

LETTERS TO THE EDITOR.

*.*Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.

Cremona's Projective geometry.

YOUR review of this work does scant justice, I think, to one of the most valuable text-books recently published. We have a multitude of elementary books in all branches of science; but why most of them are printed, there seems to be no reason, unless it be the reason why cheap razors are made. For my own part, I am thankful when we get a book such as Professor Cremona has given us,—a book so well designed to give the student more general views of geometry.

ASAPH HALL.

Washington, D.C., Dec. 28.

Pleuro-pneumonia.

Referring to Mr. Butler's communication and your editorial remarks on p. 587, it may be of interest to put on record the fact that horses have suffered quite extensively, particularly in Indiana and Missouri, from what Dr. Salmon has decided to be vermicular or verminous bronchitis. He has fully treated of this disease, and illustrated the Strongyli which induce it in calves and lambs, in the veterinary part of the 'Agricultural report for 1885.' That producing the disease in horses seems to be *Strongylus micrurus meplis*, which is carefully figured on plate V., and described on p. 557. It is an elongate, thread-like worm from an inch and a half to two inches in length; and the point that I wish to put on record is that these Strongyli have very generally been supposed to have some connection with the narrow elongate eggs of *Orchelimum glaberrimum*. The eggs of this species are inserted in the pith of a number of different plants, and are particularly abundant in stalks of corn-tassels. The punctures were figured in my 'Fifth report on the insects of Missouri,' and again referred to in bulletin

6, U. S. fish commission. The bronchial disease which has been so prevalent and fatal to horses has been quite generally associated with these eggs, the supposition being that the horses became diseased by eating the corn tassels and stalks. The *Orchelimum* eggs have been received from about a dozen different correspondents, all of them independently making the same suggestion as to their connection with the bronchial worms, a rather remarkable instance of a prevalent and popular error arising from an imperfect knowledge of natural science.

C. V. RILEY.

Washington, D.C., Dec. 27.

Stereoscopic vision.

I would like to inquire of the readers of *Science* if it is generally known to be possible—and if, indeed, it is possible to all persons—to obtain a complete stereoscopic effect in viewing a *single* picture, and without a glass or other instrumental aid.

I have for several years been in the habit of practising a method in looking at photographs or good engravings, which, with me, makes the illusion perfect, and the objects pictured seem to stand out in full relief like the real objects.

It consists simply in entirely closing one eye, and shutting the other as nearly as possible, while admitting just sufficient light to afford a distinct, or at first rather dim, view of the picture. It is necessary first, however, to see that the picture is placed in a light corresponding as accurately as possible in direction with that in which the objects are represented in the picture: for example, if the scene is shown as lighted from the left, let the picture be so held that the actual illumination is from the left, and exactly at the same angle. An incongruity in this respect will spoil the result entirely. A little time is usually required to realize the full effect, and probably many persons unaccustomed to the experiment will need to exercise more patience at first than after some practice.

It is found, too, that a picture presenting strong lights and shades, as of photographs of objects in the direct sunlight, or engravings of the same character, produces the effect most readily. Take, for example, the engravings representing highly magnified views of the scenery on the surface of the moon, such as those illustrating Professor Langley's article 'The new astronomy,' in the *Century*. After looking at one of those in that manner for a few moments, the parts represented as elevations appear to rise from the paper; and, indeed, the flat surface disappears altogether, as well as the inky blackness of the shadows, and both elevations and depressions appear in startling reality.

The lights and shadows appear to be merely the illuminated and unilluminated portions of the same uniformly colored substance, showing it distinctly carved in all the reality of the forms intended to be indicated. It seems as if one could closely estimate the actual heights of the elevations, and the lengths of the shadows, and the precise position of the source of light.

The illusion once perfected, it may be retained while opening the eye a little, thus gaining a clearer view; but, carrying this a little too far, the scene at once 'flattens out' again, and becomes a mere lifeless black-and-white representation of the outlines, producing nothing of the impression of reality of contour: the landscape is gone.