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, 41.38; 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.

In 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.

As far as I am aware, this simple method is not generally known or thought of; nevertheless I am inclined to the belief that it would become easy to most persons after a little practice, and it is certainly very convenient, and greatly enhances the pleasure of viewing the many fine engravings almost everywhere to be seen. W. H. PRATT.

Davenport, Io., Dec. 14.

Laws against quacks.

I notice in your notes on the laws regulating the practice of medicine and surgery an omission to call attention to the fact that a bill (senate, 485) passed the senate last year, and would have passed the assembly but for the late date of its introduction, whereby it failed to be reached on the calendar. That bill embodied the points of agreement of those practitioners of medicine who have a legal status. It was based upon the bills introduced by the Medical society of the state of New York, so far as they were not concerned with the formation of a board of medical examiners. The State homoeopathic society has directed its legislative committee to favor this bill if again introduced, as it probably will be. I do not think that either of the judges you name would consider the construction of the registration law adopted by the Medical society of the county of New York as absurd; nor would they differ in opinion from the judges before whom that construction has been maintained.

You will admit, I think, — as frankly as you admitted that the society was justified in the prosecution that elicited your comments, — that it is reasonable to require registration of every physician in a county who regularly practises or resides therein. No registered physician has been prosecuted for a consultation or occasional act of practice in a county wherein he was not registered. But the bill in question specifically meets your criticism, and, if introduced again, will be made even clearer on this point. There is an opportunity at the next session of the legislature to codify the various acts restricting medical practice into a simple statute, and fair criticism of the bill in question will materially aid the purging of the statute-book of the present clumsy enactments.

W. A. PURRINGTON.

New York, Dec. 21.

The Panama canal.

The article with the above title, from the pen of M. de Lesseps, copied by you in Dec. 3 issue from *The Scottish geographical magazine* for November, contains some errors both of fact and of inference.

Commercially the needs for and uses of the canal are misstated and overestimated. Trade must follow certain routes, governed by the earth's form and dimensions, and by the winds that blow or do not blow. For fear of the calm belt in Gulf of Mexico, the captain of a big ship, loaded with guano or nitrate of soda, would rather face the gales off Cape Horn. Because of the 'trades,' sailing ships from India and Australia would still go home *via* Cape of Good Hope. I have yet to meet a captain who would not elect Cape of Good Hope rather than Panama if loaded at a port even as far east as Philippines. A sailing-ship bound from San Francisco to Liverpool would think twice before she paid any thing to be put into the calms in land-locked water off Colon. Many captains have told me they would go on around the Cape Horn. Many cargoes are put on to sailing-ships, *because* they will be longer at sea than if sent per steam. It is no uncommon thing that a sailing-ship gets the same, and even more, freight than a steamer, because of the exigencies of the shipper or the condition of the market for merchandise. Hence the assumption that any of his '2' (p. 519), or that all of '1' or '3,' would seek Panama, is unfounded. A fair estimate, granting the correctness of his figures, would throw out '2,' and halve '1' and '3,' and leave, say, rising 2,000,000 tons per annum. In the table of distances, same page, London to Sydney, Havre to Sydney, he conveniently forgets that that traffic would use Suez rather than Panama. I fancy it is not generally known that the entire traffic of Suez is steam. There has never been an American merchantman through Suez, nor a sailing-ship of any nationality. The few sailers that have passed through were towed not only through Suez, but the entire distance to and from port of departure (Bombay) and destination (Malta). Practically the entire traffic on Suez is steam

But M. de Lesseps does not refer to the most important factor in the problem. The evolution of the marine engine is still progressing. Steamers of moderate size and speed already approximate the expenses of sailers, not counting the further saving in interest on plant by reason of more frequent 'turns;' i.e., though a steamer may cost more than sailer, the former makes more voyages in a year, i.e., earns more freights. Before the Panama canal is finished, I doubt not such progress will have been made in compounding engines and in expansion of steam, that few new sailers will thereafter be built. The carrying-trade of the world will be done by steamers, just as the passenger trade has passed into their hands. Soon, as nations reckon life, sail will be limited to cruising for pleasure, fish or whale, or scientific research: even these will have steam power to go and come to place of resort. This change might and probably would throw the traffic of west coast America with east coast America and Europe into Panama canal; but Australia and India with Europe and America, never. FRANK GOODWIN.

Framingham, Mass., Dec. 13.

What was the rose of Sharon?

In *Science* for May 14 (vii. No. 171) is an article headed 'What was the rose of Sharon?' Though not familiar with either former or recent discussions of the question, I am interested in recalling an observation of my own while riding over the plain of Sharon on the road from Jaffa to Ramleh. It was about the middle of the afternoon, Feb. 18, 1859. The dark soil was for a considerable distance half covered with broad patches of bright red flowers. 'Roses of Sharon!' some one exclaimed. I forget whether it was the United States consul from Beirut or some one else of our party. As my impression now is, several persons who were likely to know concurred in saying that these flowers were commonly so called in that region. The flower which I gathered and pressed was afterwards identified by an American scholar as Anemone coronaria of Sibthorp's 'Flora Graeca.' The color of the dried petals is now a dark maroon. FISK P. BREWER.

Grinnell, Io., Dec. 18.