stand, even now (supposing that Mr. Berlin's copy of my letter is correct), how the incorrect statement that the academy had bought such pipes, and paid such high prices for them, could have occurred unobserved. The boy who wrote the letter for me must have misunderstood me, and from my ignorance of the English language I overlooked this error. It may be, that, not attaching much importance to this letter, I may have sent it without first examining or looking it over.

In regard to the relics in question, it is impossible at present for me to determine whether those which Mr. Stevens *claims* to have received from me are actually *the* objects which I have sent him; for I have not seen them as yet, and for the present shall have no opportunity, as Mr. Berlin has informed you that he could not send them for my inspection without the consent of Mr. Stevens. On the contrary, Mr. Stevens says that they no longer belong to him, but to Mr. Berlin.

Immediately on receiving your first communication on this matter, I resolved to send back to him the arrow-heads received in exchange, and to request him also to return those which he claimed were *not genuine* to me. Mr. Stevens returned the package to me, and refused to give me back those which he claimed I had sent to him, with the excuse that they were no longer in his possession, as he had given them to Mr. Berlin. Hence obviously it is impossible for me to determine as to the correctness of the statements made by those gentlemen concerning said relics. Their refusal to allow me to inspect the objects is very strange and perplexing to me.

As Mr. Stevens informs us that many of the relics I sent him were thrown out in the yard on a pile of other rejected relics, and have been lying there some years exposed to the weather, it is no wonder they became, as he says, considerably changed in appearance, and the labels lost. Under these circumstances, and after so long a time, it must have been very difficult for him to select the relics in question, and to distinguish them with certainty from those received from other sources in his extensive exchanges. I have no doubt, if I could see the relics, I should recognize many or most of them, unless they have been so changed by Mr. Stevens as to be no longer recognizable. Until this opportunity is afforded, the present account of the transaction must suffice.

That the intention or the thought of having any thing to do with doubtful relics, or of deceiving any one with them, was far from my mind, will, to you, scarcely require any special assurance from me.

J. GASS.

Postville, Io., April 10.

The above is a correct translation from the German of a communication written by Rev. J. Gass to Charles E. Putnam, Esq., bearing date April 10, 1886.

CARL L. SUKSDORF.
WM. KIEPE.

Davenport, Io., May 4.

What was the rose of Sharon?

An interesting question is renewed, in a late number of the *Edinburgh review*, on 'What was the rose of Sharon?' It is very possible that some of the readers of *Science* may be able to throw further light upon the subject, or at least give trustworthy opinions as to the merits of 'crocus,' 'narcissus,' or 'reed.' The extract is, I hope, of sufficient interest to merit republication: it is as follows: —

"The 'rose of Sharon' has long been a disputed point. The Hebrew word *khabatseleth* occurs only in Canticles ii. 1, and Isa. xxxv. 1. The Revised version reads 'rose' in the text, and 'autumn crocus' in the margin. We are of opinion that the narcissus (N. tazetta) is intended. The scene of the Canticles is in the spring, when the narcissus would be in blossom: it is very sweet, has long been and still is a plant of which the orientals are passionately fond. Hasselquist noticed it on the plain of Sharon; Tristram, in cultivated land and lower hills from Gaza to Lebanon; Mr. H. Chichester Hart, in the districts between Yebdna and Jaffa (plain of Sharon). 'Some low-lying patches,' he says, 'were quite white with it.' The October quarterly statement (Palestine exploration fund) contains a valuable paper by Mr. C. Hart, entitled 'A naturalist's journey to Sinai, Petra, and South Palestine, made in the autumn of 1883.' The autumn crocus has no perfume, and would not be in bloom till late in the year. The narcissus is a bulbous plant, which is apparently implied in part of its Hebrew name; i.e., *betsel* (a 'bulb,' an 'onion'). But quite a different plant has very recently appeared as the claimant to the honor of being the 'rose of Sharon:' an Assyrian plant name is introduced to us by Dr. F. Delitzsch. Among the names of different kinds of *kânû* ('reed') and of objects made of it, occurring on a tablet in the British museum, and published in 'The cuneiform inscriptions of western Asia,' mention is made of one called *khabatsillatu*, which in sound is identical with the Hebrew name in Canticles and Isaiah; so that Dr. F. Delitzsch, without a moment's hesitation, upsets all other floral aspirants with one decided blow, and reads 'reed of Sharon,' 'the desert shall rejoice and sprout like the reed.'" C. W. T.

Thermometer exposure and the contour of the earth's surface.

Various writers during the last hundred years, and perhaps earlier, have called attention to the marked differences of temperature which are frequently to be found in clear weather between hill-tops and adjacent valleys. Recently Hann and Woeikof in Europe have written numerous papers on the subject; and in this country instances have been given by J. W. Chickering, jun., and S. Alexander (*American meteorological journal*), Professor Mendenhall (*Science*), Professor Hazen (Professional paper of the signal service, xviii.), and Prof. W. M. Davis (*Appalachia*). But attention has not generally been attracted to the bearing these differences of temperature have on the subject of thermometer exposure.

My attention was drawn to the subject by the marked differences of temperature which were reported by different observers at Ann Arbor, Mich., during the cold period of the winter of 1885; and, in order to study the subject, a regular series of observations were begun between the astronomical observatory at Ann Arbor and an adjacent valley through which ran the Huron River. The bottom of the valley was about a hundred and fifty feet lower than the land on each side of it, and was about a quarter of a mile distant from the side on which stood the observatory. The method employed was to obtain the temperature at the observatory by means of a sling thermometer; then descending the

hill, and whirling the thermometer, to read it at intervals until the bottom was reached. A return trip was then begun, and the temperature obtained again at the top of the hill. Later, minimum thermometers were similarly exposed at both places, and their readings compared. Early on clear mornings, and at night, the temperature was usually found several degrees lower in the valley, and differences of ten degrees were not uncommon. At 7 A.M. on the morning of Feb. 18, the temperature at the observatory was 3½° below zero. On descending the hill, the thermometer fell rapidly, and at the bottom of the valley read 18° below zero. The fall was greatest along the steepest decline, and in one place fell three degrees within twenty-five feet. Returning, the thermometer rose rapidly, and at the top of the hill again read 3½° below zero.

During the continuance of these observations, Professors Pettee and Schaeberle kindly consented to take simultaneous observations of temperature with those at the observatory. One lived about a mile to the south-west, and the other about the same distance to the west. Professor Pettee was at about the same level as the observatory, and his readings differed but little from the observatory readings; but the observations taken at the home of Professor Schaeberle, which was at a considerably lower level, several times gave temperatures ten degrees lower than those at the observatory. These lower temperatures, observed both in the adjacent valley and at the home of Professor Schaeberle, were only found at night and on clear, quiet mornings, and disappeared in the middle of the day and in cloudy weather. They were due, no doubt, to the fact that the air most cooled by radiation, or by contact with the earth's surface thus cooled, was heaviest, and sunk to the lowest levels. In the middle of the day the temperature was usually found slightly higher in the valley than at the observatory.

It seems evident, then, that for scientific purposes which are intended for the study of temperature changes over large sections of country, and where stations can only be obtained many miles apart, it is necessary to avoid these merely local differences of temperature; and the only method of eliminating them is to get above them: in other words, wherever irregularities in the earth's surface exist, the thermometer should be on, or at least as high as, that of any considerable portion of land surrounding it, and not in valleys. The thermometer should, if possible, be away from buildings, and as many feet above ground as convenient. The best form of shelter is probably that devised and described by Professor Hazen. I have found by comparison that thermometers placed in accordance with these considerations differ but little in their readings, though they are many miles apart in a horizontal direction. But scientific people should not fall into the error of supposing that thermometers so placed represent the temperature over the adjacent country. The position is merely that in which local influences are attempted to be avoided; and it is not safe to say to persons that their observations must be erroneous because they differ from those of the signal service or some observatory.

This is a subject I think well worthy of the consideration of those in charge of state weather services. H. HELM CLAYTON.

Blue Hill observatory.
Readville, Mass., April 16.

Double vision.

Since my earliest boyhood, or for more than fifty years, I have had double vision and stereoscopic eyes, which I have probably exercised more than a million times. I have exercised the double vision to such an extent that it has become to a certain degree compulsory, as, if I look at an object forty feet more or less distant, all intervening objects are doubled involuntarily.

I often stereoscope (if that be a good verb) wall-papers and carpets, if figures be of proper size, arrangement, and distance. This has a wonderful effect, producing the following changes: the walls of an ordinary room are apparently thrown to a distance of a hundred feet, and are proportionately increased in size. Any defects in the putting-on of the paper will exhibit themselves in the same manner as I shall mention when describing the effects on gratings or lattice-work. The borders of the paper, if not 'stereoscoped' at the same time, with all pictures, etc., on the walls, will remain at their proper distances, and seem suspended in the air, like Mohammed's coffin. The surface of the paper is also remarkably increased in brilliancy. In 'stereoscoping' common photographs, they are thrown to a much greater distance, and the proper stereoscopic effect is brought about in the middle one of the three. I suppose this accounts for the increased size of the walls of rooms when so treated.

What has bothered me the most is the effect on gratings and lattice-work. In a piece of lattice-work, say, eight by ten feet, and the eyes five feet distant, the work is broken up, and has, instead of a common surface, an apparent depth of three or four feet. In some places there will be but a single piece; in other places two or three will be together with their parallelism properly preserved. I suppose that it is brought about by irregularities in the construction of the diagonals in the structure; but I do not know enough about optics to explain this peculiar breaking-up, and differences in apparent distances of the different pieces making up the work. The same effects are produced in looking down at gratings in pavements. GEO. KELLER, M.D.

Bucyrus, O., May 10.

Partition of Patagonia.

The geographical note on the 'Partition of Patagonia' in the current issue of *Science* (No. 170) calls to mind your recent strictures on cartographers for failing to keep our school maps up to the times. It would be but fair to state that the cartographers are not delinquent in this instance. The treaty of partition was concluded at Buenos Ayres, July 23, 1881, — five years ago. For the last three years all our more popular school geographies have shown the boundaries of Chili and the Argentine Republic as determined by this treaty. RUSSELL HINMAN.

Cincinnati, May 10.

An old-time salt-storm.

Can any of your readers tell me the exact date of the so-called 'salt-storm' which came upon the coast of Massachusetts about 1815? As described by old inhabitants, there was a high wind and heavy rain, and the houses and all objects within a mile of the water were coated with salt. Are such storms of frequent occurrence, and what is their explanation? H. C.

Salem, Mass., May 10.