and the brilliancy of any orb, its "magnitude" in fact, will therefore depend on its age, quite as much as on its size or distance. On this view, Sir W. Herschel's method of "star gauging" cannot be relied on for a correct determination of the actual shape of the cluster called the "Milky Way," as instead of taking the average of brightness only, as an indication of the average of distance, we have to superadd the average of age. Now, the smaller the star, the more quickly will its light die out, and, therefore, the necessary extent of our galaxy is immensely reduced; in other words, it appears that while the space separating us from the nearer stars, for which parallax has been obtained, remains of course unchanged, the computed distances of those hitherto considered to be farthest off, will be much lessened, as there appears to be no reason for concluding that telescopic stars are necessarily more distant than bright ones for which we cannot obtain parallax, but simply that they are older, or smaller, or both, and therefore dimmer.

Mr. Proctor, in "Other Worlds than Ours," argues that as telescopes barely reach the outermost stars of our own cluster, therefore it is impossible that they should reach to and resolve clusters constituting other systems and lying at distances enormously greater, and therefore that the resolvable nebulæ must lie within our galaxy. If my idea that the stars of our cluster which the telescope shows with difficulty, are not distant but dim, be correct, Mr. Proctor's argument appears to lose its force.

It will be readily allowed that if the light of the stars be fading away, a vast number may have already become extinct, and that it is indeed possible that the orbs now visible may be but a small surviving remnant of far greater multitudes which once illumined the heavens. If our cluster then be much reduced in extent, and its constituents be largely increased in number, it would follow, I imagine, that the chances against collision would be much reduced, and it then becomes less difficult to conceive the possibility of such an event having occurred in the case of the recent outbreak in τ Coronæ Borealis, especially if it were caused by the unobserved approach of an extinct body. This outbreak is usually ascribed to a sudden conflagration of hydrogen, the star being, as Prof. Roscoe says, "on fire." But a star self-luminous surely must be always on fire, and if it contain hydrogen, that gas must be in a state of constant conflagration. The temporary brilliancy of the star seems rather such as would be occasioned by a collision with some comparatively small body, whose impact was yet sufficient to generate heat enough to accomplish its own disintegration and ignition. Let us suppose that collisions are possible, and that their frequency is merely a question of the chances. What would be the consequences of such an event? I imagine that they would depend chiefly on the relative momenta of the colliding bodies; that if one were very much larger than the other, and the velocities high, the temperature would be raised sufficiently to dissipate the smaller into gas, while merely heating, or possibly liquefying the larger. If the bodies were nearly of a size, and their momenta were great, possibly both would be reduced to a gaseous condition; in either case their tendency would be to form ultimately a body equal in weight to the sum of its two constituents. Either the larger body would annex the smaller, or, if both became nebulous, the fervid gases would radiate their heat and contract anew into a system possibly containing a sun and planets.

Again, supposing that two bodies approach each other in such a manner as to avoid a collision, that is, so that their mutual gravity causes them to leave their paths and revolve round each other, we should have the explanation of the existence of double, treble, multiple stars; we should also understand how it happens that some stars (Sirius, for instance,) are accompanied by non-luminous orbs. Also, it would seem that if extinct stars are really far more numerous than is generally supposed, the theory which regards the revolution of attendant dark bodies as one cause of the variability of certain stars, receives fresh support.

Thus, in the course of time, nebulæ would form suns, suns would grow cold, or, while yet glowing, would come into contact and combine with other suns, till gradually space would be peopled with suns, larger and larger, but less and less thickly strewn. Pursuing the idea, we arrive at a period when all the stars of each galaxy shall become agglomerated into one mighty globe—nay, when all these vast galactic suns shall come together and form one solitary orb, in which all the matter once scattered through space shall be collected, accomplishing its successive fates as a sun without a system—a world without a sun—a cold and naked ball. EARDLEY MAITLAND

Why is the Horse Chestnut Tree so called?

DURING the spring this tree is the ornament and pride of our public and private parks. In "Woodland Gleanings" it is stated to be a native of the north of India, and is supposed to have been introduced into England about 1575.

Our observant forefathers have given it the very significant name of *Horse* Chestnut (*Castanea Caballina*),* to distinguish it from all other species of chestnuts. The *reason* for so doing I have never seen stated in print; but from the three specimens of cuttings from a branch of this tree which I enclose, it will be very manifest. All over its branches, at every bud, can be seen what at a glance will be taken for an exact conformation of the *foot of a horse*, exhibiting the hoof, the nails of the shoeing, the fetlock-joint, &c., in marvellous miniature, some, of course, better developed than others. This curious freak in nature's vegetable kingdom, has, no doubt, been the origin of our nomenclature of this tree; and it would be an interesting point of philological inquiry to ascertain *whether or not its native Asiatic name has incorporated or associated with it that of the horse?*

I write with the view of eliciting information on this point, and with the hope, too, that some of your botanical contributors will throw further light on this peculiarity.

EUGENE A. CONNELL

Fall of an Aerolite

A LETTER of the year 1628, "sent by Mr. John Hoskins, dwelling at Wantage, in Berkshire, to his son-in-law, Mr. Dawson, a gunsmith dwelling in the Minories without Aldgate," and preserved among Nehemiah Wallington's Historical Notices (i. 13) contains the following narration:—

"On Wednesday before Easter, being the ninth of April, about six of the clock, in the afternoon, there was such a noise in the air, and after such a strange manner, as the oldest man alive never heard the like. And it began as followeth:—First, as it were, one piece of ordnance went off alone. Then after that, a little distance, two more, and then they went as thick as ever I heard a volley of shot in all my life; and after that, as if it were the sound of a drum, to the amazement of me, your mother, and a hundred more besides; yet this was not all, but, as it is reported, there fell divers stones, but two is certain, in our knowledge. The one fell at Chalows, half a mile off, and the other at Barking, five miles off. Your mother was at the place where one of them fell knee deep, till it came at the very rock, and when it came at the hard rock it broke, and being weighed, all the pieces together, they weighed six-and-twenty pound. The other that was taken up in the other place weighed half a tod, 14 pound."

I do not know whether there may be any other record of this remarkable aerolite, so simply but graphically described. Is it not just possible that some of the fragments may yet be preserved in the neighbourhood of its fall? At any rate a search would involve but little trouble. T. W. WEBB

ANDERSON'S UNIVERSITY

WE extract the following from the *Evening Citizen* (Glasgow) of June 22:—

"The annual meeting of the trustees of Anderson's University was held this afternoon within the institution. Mr. William Ewing, in the absence of the president, was called to the chair. In the annual report which was submitted, reference was made to the death of Dr. Penny in November last, and the appointment of a successor. Mr. Young, of Kelly, who had arranged to set aside 10,000 guineas for the endowment of a Chair of Technical Chemistry in connection with the University, had, it was stated, no further proposal to make, he leaving it to the trustees to make what alteration in the deed of trust they may think proper. Under these circumstances, the managers recommended that advertisements be issued for a successor to Dr. Penny; that the chair should in future be styled the Chair of Scientific Chemistry; and that in electing the professor power should be reserved to the trustees to create such other chair or chairs of Chemistry in connection with the University, and elect such additional professor or professors to fill said chairs as the trustees may see fit; and also to arrange and define, from time to time, the respective departments of the subject to which each professor, including the Professor of Scientific Chemistry, should devote himself. Regarding the mode of electing professors, the

* The scientific name of the horse-chestnut is *Æsculus hippocastanum* it has no relationship to the *Castanea*, or sweet chestnut.—[ED.]