

POETRY.

Selected.

DEATH.

BY W. O. R. FEARBY.
Lift high the curtain's drooping fold,
And let the evening sunlight in;
I would not that my heart grew cold,
Before its better years begin;
Tis well at such an empty hour—
So calm and pure—a sinking ray
Should shine into the heart, with power
To drive its darker thoughts away.
The bright, young thoughts of early days,
Shall gather in my memory now,
And not the later cares whose trace
Is stamped so deeply on my brow:
What though those days return no more;
The sweet remembrance is not vain—
For heaven is waiting to restore
The childhood of my rest again.
Loving impatient mourner stand
In hollow sadness near my bed—
But let me rest upon the hand,
And let me hear the gentle tread
Of her, whose kindness long ago,
And still unpworn away by years,
Has made my weary eyelids flow
With grateful and admiring tears!
I go—but let no plaintive tone
The moment's grief of friendship tell
And let no proud and graven stone
Say where the weary slumber dwell
A few short hours—and then for Heaven!
Let sorrow all her fear dismiss—
For who would mourn the warning given,
Which calls us from a world like this?

MISCELLANEOUS.

From the Companion to the British Almanack for 1833.

INFORMATION CONNECTED WITH THE CALENDAR AND THE NATURAL PHENOMENA OF THE YEAR; AND WITH NATURAL HISTORY AND PUBLIC HEALTH.

ON COMETS.

(Concluded from our last.)

The appearances of comets, as far as appearances can be, proofs of their very small mass. The phenomenon of their tails, adopt what explanation we may, can only be accounted for on the supposition that the comets themselves are of very small density. But even the nebulous head of the comet has often been so rare, that small stars, which a fog of moderate intensity would hide, have been seen through its most central parts. Thus Seneca mentions the fact of stars having been seen through comets; Sir W. Herschel saw a star of the sixth magnitude through the center of the comet of 1795; Professor Struve saw one of the eleventh through that of Encke; and Sir John Herschel, in the memoir already cited, (in col. 2, note,) informs us, that on the evening of the 23d of September last, he saw a whole cluster of stars of the sixteenth magnitude, almost through the very centre of Biela's comet, the light of which, according to Sir John Herschel, could not have passed through less than 50,000 miles of the matter of the comet. As neither of the gentlemen above quoted saw any effects of refraction which would have been very apparent had the cometic matter been even many times rarer than our atmosphere, (if indeed, they could have been seen at all through such a mass, which may fairly be doubted,) we are entitled to conclude that those comets, at least, which are best known to us, are of a rarity far exceeding that of any matter as it exists at the surface of our globe. If any man should assert that the largest comet ever seen, including its millions of miles of tail, contained no more matter than is to be found in the New River Head, he might justly be blamed for asserting more than he knew; but certainly any one who positively denied the fact would deserve the same censure.

As we are not writing for the scientific part of the community, we will say a few words on a very general fear which prevails—namely, that the near approach of a comet would break our planet in pieces, or at least produce a great accession of heat, sufficient perhaps to destroy animal and vegetable life, if not to burn the world altogether. The argument seems to have originated in a notion, that because heat produces expansion, therefore very highly expanded bodies must needs be very hot. It would be as good an argument to say, that because expansion by any other means except heat, produces cold, that therefore all comets must be very cold; and neither argument would, in the least degree, afford matter even for a rational conjecture. We can form so little idea of what the state of a planet of vapour, it may be consisting only of one sort of matter, would be, that we might with as much reason speculate upon the possible organization of the possible animalcules which swim in that vapour, as try, in the present state of our knowledge, to ascertain whether any and what degree of danger awaits us from such a source. A comet may certainly strike the earth in the next century; not one of these which are known, unless the laws of nature be singularly altered, but some one or other yet to come. It has been shown, but by considerations of so high a nature that the result cannot be expected to bring much conviction to any but a mathematician; that if a comet were launched at hazard into our system, for one orbit in which it could strike the earth there are 281 millions in which no such thing could take place as the laws of nature stand at present. The advocates of cometary interference (we have met with some whose manner of expressing their opinion on the subject almost entitles them to that name) usually suppose a special interposition of the Divine power, which, resting on their own interpretation of certain Scriptural prophecies, they suppose will bring a comet on the earth. They are usually people of some religious feeling, and would act more consistently with the idea they ought to have of their own ignorance and the Divine power, if they ceased to prescribe to the Creator in what way it should

please him to alter the course of events which it has hitherto been his will to arrange. It is impossible to produce any other argument on the subject, consistently with the design of this paper; the province of natural philosophy is to collect and compare facts, and to say what will be, if things continue as they have been; it never presumes even to conjecture what shall be, when the power which has hitherto disposed events in one manner, shall judge it right to ordain a different arrangement.

There are many who, without going the length of fearing danger from the shock of a comet, nevertheless imagine that an unusually hot weather which happens while such a body is visible, or going to be visible, is caused by it in some measure at least. To such a circumstance the fine vintage of 1811 was attributed; and many, even among the educated classes, imagined that the heats of last September and August were occasioned by the approach of Biela's comet. We can certainly re-echo, from this side of the channel, the complaint which M. Arago makes, in the *Annuaire* for 1832, already alluded to, of the scarcity of the meanest knowledge of scientific facts among the middle ranks of society. With a burning sun over head, we have heard those, who might have known better, accusing the comet in the manner aforesaid.

It appears, however, from the table of M. Arago, in which the mean temperature of every year, from 1803 to 1831 inclusive, is placed side by side with the number of comets observed in that year, that there is no visible connexion between the one and the other. Thus 1806 and 1811 were both hot years, the first however hotter than the second, though the first had one comet only of no note, and the second had two, one of which was the most brilliant which the present generation has seen. Again, the year 1826, with its five comets, was not so hot as 1831, which had only one. That hot years in general have more comets than cold ones is very true, and for this simple reason, that the former, generally giving a finer sky, are more favourable for their discovery. We must not forget that the greater number of such bodies are not visible to the naked eye. Thus all the years between 1803 and 1831 inclusive, the temperature of which exceeded the average, mustered 29 comets between them; and the remaining, or cold years, only 15. We must therefore say, not that the comets brought the heat, but rather that the heat brought the weather which made the comets visible. In the period above mentioned there were 44 comets observed, counting distinct appearances of the same comet as different; of which only two were in the least remarkable for brilliancy—those of 1811 and 1823.

Having shown that some comets are bodies in the highest state of tenuity, and conjecturing, with a great degree of probability, that the same is true of all, we may mention a phenomenon which has been several times remarked by different observers, viz. that in their approach to the sun they appear to contract their dimensions, or the nebulous head of the body diminishes in apparent diameter. As they recede from the sun they begin to dilate again. To explain this phenomenon, some have had recourse to the highly elastic fluid or ether, which, as we shall presently see, has been supposed to fill the solar system at least. If this ether, say they, be denser as we approach nearer the sun, we must expect that the comet will be more compressed by it as it approaches its perihelion; and will therefore be confined within smaller limits.

To this it is answered, and justly, that such an explanation might suffice, if the comet had an exterior case, which, not being incompressible itself should hinder the ether from penetrating the light body of vapour. In the memoir of Sir John Herschel already quoted, three distinct possible causes are suggested, two of which are entirely independent of an ethereal fluid, and all so probable, that it may be the phenomenon is partly due to every one of them. In the first place, on account of the great rarity of cometic matter, it may be that what we call cohesion exists only in a very trifling degree, so that perhaps we ought to consider the motion of the several parts of the comet independently of the others. For example, if the diurnal rotation of the earth were suddenly stopped, and it continued in that state to move round the sun, the parts nearest to the sun, being more attracted by it, would, if they were free to move by themselves, describe an orbit differing in a slight degree from that of the parts which are farthest from the sun. But as, owing to the cohesion of the various parts of the earth, they must all move together, the orbit really described by the earth's centre lies between those which would be described by the parts nearest to and farthest from the sun. We have hitherto considered the comet as one mass of matter, the motion of every part of which influences that of the rest. If however, it should consist of particles so little bound together by cohesion, as to allow of each particle describing, or nearly describing, its own independent orbit, the consequence would be just the phenomenon observed—namely, that it would contract as it approached the sun, and dilate as it receded again from it. To illustrate this, draw several ellipses about the same focus, very near to one another, and let one particle move upon each from the perihelion. It will be evident that, as the particles increase their distance from the sun, they increase their distance from one another, and vice versa. The second explanation proposed by Sir John Herschel is that, perhaps, by the motion of the comet from the sun, and its consequent appearance in a darker part of the heavens, some layers of nebulous

matter may become visible, which were not so before on account of their yielding too little light. The third is, that the cometary matter may consist, like a fog, of small particles of moisture floating in a transparent fluid, and which the resisting medium, being hotter near to the sun, renders invisible, by raising their temperature, and turning them into vapour. If this were the case, it is evident, that as the comet approached the sun, the fog at the edges, so to speak, would be cleared up, and consequently the apparent part of the comet rendered less, and vice versa. It is of course impossible to decide between these very ingenious explanations, so as to say which is the more probable; if our notions of the cometary state be just, we cannot deny that the two first must produce some effect; but the greater part of the phenomenon may still be due to the third or some other cause.

The only remaining point of any magnitude, connected with the known facts of comets, is the question, whether there is any fluid medium in space, of such specific gravity, as to offer a sensible resistance to their motion. The question of resistance, or no resistance, is one of great importance, as the stability of our system depends in a great measure upon it. The solar system would be said to be stable, strictly speaking, if it were so constructed that its motions might continue for ever in the manner now observed, without any such change, arising from the mutual attractions as would endanger the safety of any one planet. If a number of planets were launched into space, without any particular arrangement of their motions, the chances for the stability of such a system would be very small. We observe in the solar system the following facts, which mathematical analysis shows us are all necessary to its stability, as far as the planets are concerned:—1. The sun is very much greater than any one of them, and the planets are placed at such distances from one another, that the attraction of the sun upon each is always very much greater than that of the other planets. 2. They all move in the same direction round the sun. 3. The orbits are very nearly circular and are inclined to one another at small angles. From these circumstances, and the law of gravitation, it has been deduced that the average distances of the planets from the sun, and also the average motions, are invariable, or at least will continue the same for a number of ages, which, to our limited ideas, give the notion of eternity. But all this is on the supposition, that there is no fluid which offers any resistance to the planetary motions; if such a fluid exist, however small its density may be, it can be shown that it continually decreases the mean distance and increases the mean motions. Observation teaches us, that the mean distances of the planets are invariable, or at least that, if they do change at all, the variation is so small, that it has not become perceptible to our best instruments in hundreds of years. The resisting fluid, therefore, if it exists, is of an extremely small density. Comets offer the only chance left to us at present of settling the question; being of very little density themselves, their motion will encounter more resistance than that of the planets, for the same reason that a feather will fall more slowly to the ground than the same weight of iron. If there be a resisting medium, it will certainly diminish the mean distance of the comet, and increase its mean motion; and this phenomenon has been observed in the comet of Encke, which is the one with which we are the best acquainted. Professor Encke says:—“If I may be permitted to express my opinion on a subject which for twelve years has incessantly occupied me, in treating which I have avoided no method, however circuitous, no kind of verification in order to reach the truth as far as it lay in my power; I cannot consider it otherwise than completely established, that an extraordinary correction is necessary for Pons' comet”—that is, the one which all the world, except Professor Encke, calls Encke's comet—and equally certain, that the principal part of it consists in an increase of the mean motion proportionate to the time.” Professor Airy adds, “I cannot but express my belief, that the principal point of the theory, viz., an effect exactly similar to that which a resisting medium would produce, is perfectly established by the reasoning in Encke's memoir.” If this conclusion be correct, we may predict that, in time, this comet and every other will fall into the sun; we know, however, that the medium, if it exists, cannot sensibly effect the planetary motions for a great number of centuries.

There seems to be some cause in operation by which the brilliancy of comets is continually diminishing. That of Halley, in one of its preceding revolutions, is described as giving a degree of light certainly superior to that which it gave in 1682 and 1759. Sir John Herschel could only see Biela's comet through a reflecting telescope of twenty feet in length, an instrument of enormous power in the collection of light; and though he afterwards found it with a refracting telescope, he asserts that he never should have succeeded with the latter, unless he had previously known where to look for it. If the parts of the comet have so little cohesion, as has been, with great probability, conjectured, it may easily lose a part of its substance as it passes through a resisting medium. We have however as yet but

*In a dissertation which appeared in the *Astronomische Nachrichten*, and has been translated into English by Professor Airy, with an Appendix in which the latter gentleman fully coincides in the conclusion of Professor Encke. Those who are acquainted with the present state of science will give great weight to these authorities, to say nothing of their calculations being before the world.

little specific information on this subject. With regard to the cause of the tails of comets, we can say nothing with certainty. Their existence affords a strong presumption for the very little density of the nuclei. They were at one time considered as being in a continuation of the line drawn from the sun to the comet; it has, however, been shown, that they always fall a little behind this line with respect to the comet's path, and have sometimes been even perpendicular to it. That of 1680 was 90° of the heavens in length, so that part of it might have been in the observer's zenith when the comet was setting. It was 141 millions of miles in length. Some comets have had what we may call a succession of tails, one succeeding another, with a vacant space between every two. The conjectures as to the nature and formation of these singular attendants are entitled to very little attention.

As to the multitude of idle theories with which, for want of better information, this part of astronomy has been loaded, such as that the planetary system was formed by matter struck off from the sun by one comet; that another caused the deluge; that the four small planets were formerly one which was broken in pieces by a third; that the moon was originally a comet, and the like;—we would willingly amuse our readers by an account of them, if our limits permitted. They will however find them all, handsomely exposed by M. Arago, in the *Annuaire* already cited. If any, or all of them, should be hereafter proved to be true, it will be no excuse for those who first made them; for a result produced on insufficient evidence is bad, whether true or false. As the science of astronomy approaches towards perfection, we shall doubtless add some important and interesting facts to our knowledge of comets.

A GLANCE AT GLASGOW.

It has been remarked in some of our papers of statistical information, that no country on this side of the Atlantic has exhibited so speedy a rise from poverty and idleness to opulence and habits of industry as Scotland. Within the last sixty or seventy years this naturally poor, and by no means fortunately situated country, has undergone a perfect revolution in its appearance and character. So striking and gratifying an instance of what can be accomplished by perseverance under difficulties and peaceful pursuits, is particularly exemplified in the history and present condition of the city of Glasgow. This large and populous town, which enjoys a pleasant situation on the north bank of the Clyde, at the head of the navigation of that beautiful river, originated in the sixteenth century, as the seat of a pious ecclesiastic, named Mungo, and continued for many ages little else than an episcopal village. So long did it continue to be a place of small consideration, that it was not until the year 1630 that it possessed a printing press; and it was only at the revolution of 1688 that a regular quay was erected for the reception of the vessels which navigated the Clyde. Until the year 1707, when the highly advantageous measure of the Union took place, the traffic carried on by export was confined to transactions with the continent of Europe, but even at the best, on a small scale. It was not till the Union took effect, that any thing like a real and advantageous system of commerce was instituted. At this auspicious epoch, Glasgow rose on the ruins of many small towns on the east coast of Scotland, particularly those of Fife whose trade it acquired. As *Baillie Nicol Jarvie* was pleased to express himself—“name were keeper against the Union than the Glasgow folk, w' their rabblings, and their ragings and their mobs,” and none have profited to such an extent by this judicious measure. In short, the Union opened up a trade with the American and other colonies, induced the manufacture of lawns, cambricks, muslins, and other articles of similar fabric, and created that energy of mind in the people that has placed them in the highest rank of commercial enterprise and intelligence.

Though this great emporium of the commerce and manufactures of Scotland possesses not either the picturesqueness or the elegance of the legal and aristocratic capital, it is nevertheless an impressive and fine city. The number of its spires and the judicious arrangement of its fine buildings—the more general prevalence of a moderate degree of elegance in the private structures, and the grace given to the whole by the Clyde, are points in which it surpasses the more ambitious city of the east. It possesses various other advantages in point of outward appearance. Its cathedral gives a more solemn dignity to the more ancient district. The college buildings, the finest in Scotland before the erection of those in Edinburgh, and still possessing the superior merit of more nearly resembling the splendid models of Oxford, have also a high dignifying effect. The Tron-gate, which, with its continuations, intersects the whole city from east to west, is a noble piece of street scenery, indeed one of the finest things of the kind in Europe. Few of the streets are irregular or mean, while many of them may be called fine; and what must add greatly to the pleasure experienced by a stranger contemplating them, is, that all are filled during the whole day by crowds of prosperous and happy looking people, who walk at a lively pace; and in whose eyes some animating piece of business or of pleasure may constantly be read.

The men of Glasgow—for by this appellation are they distinguished in popular phraseology, from the folk of Greenock and the bodies of Paisley—shine peculiarly in the walk of social hospitality. There is an openness of heart about them, that at once wins the affection and admiration of strangers. They are prosperous, and

prosperity disposes them to take the world well, and view aliens with a kindly aspect. They often hold wealth by an uncertain tenure, and therefore lay the less stress upon its possession. There is also an ease in the fitness of all the individual parts of Glasgow Society, which enables a stranger to join its ranks without in aught disarranging them. There is plenty of wealth for all, and no one need be jealous lest another pull the morsel from his mouth. And as there is little distinction of ranks in the commercial republic, no occasion exists for jealousy on the score of pretension. All this has a beauty in it which we look for in vain among such towns as Edinburgh, where society consists of two distinct classes, both of which are kept in a state of continued irritation and fret, by the reserve on the one hand of the upper ranks, and on the other by the forward ambition of the lower. While in Edinburgh there prevails a perpetual straining to appear members of the higher ranks of society often at a ruinous expense, and where the glare of outward show frequently covers much secret poverty and want of substantial comfort, in Glasgow there is comparatively none of these peculiarities. There the internal abundance of comfort of the domicile ordinarily supercedes the reliance on outward architectural splendour, and the satisfaction of being in good circumstances leaves little to be desired as to the vanities of an ideal superiority of rank. The social interchange of friendly communication, which is produced by the simplicity of character in the people of Glasgow, has been highly advantageous to the general interests of the citizens.

The remarkable hauteur of manner which is so observable among the mass of the population of Edinburgh, and which amounts to a species of horror of coming in contact with fellow citizens supposed to be in the slightest degree inferior as to worldly circumstances or family connection, has been unfortunately the cause of leading the town into the most ridiculous projects and the most grievous debts, as, by the total want of concert, in almost all cases, the inhabitants have been imposed upon by small factions of designing individuals. The opposite freedom of intercourse, which, as we say, is pursued in Glasgow, gives at all times room for a thorough investigation of all public matters, which generally stand or fall by the prevalent opinion. The voice of all, moreover, is concentrated by a species of representation in two large reading rooms or Exchanges—a mode of collecting general sentiment unknown in Edinburgh, where institutions of this kind have never succeeded, principally from the existing dread of a collision of ranks.

Although such are the characteristics of Society in Glasgow, in comparison with that of Edinburgh, it has to be stated, that before this mercantile capital arrived at its present pitch of prosperity, and ere wealth had been so universally diffused throughout all parts of its community, there seems to have existed in it, as marked a division as may be observed in all less commercial cities at the present day. Many of the earlier merchants of Glasgow were younger sons of the neighbouring gentry, and traded at a time when ideas of birth were still fondly clung to even by lowlanders. When the Virginia and other foreign trades, therefore, prospered in their hands, and enabled them to hold up their heads perhaps a little higher than even the cousins, or brothers, or nephews, who represented their own families, they did not fail to comport themselves as became men who had not only a little blood, but, moreover, a good deal of money. Assuming the complete air proper to Scottish Gentlemen, of what is now called the old school, they wore, it is said, fine scarlet cloaks deeply trimmed with gold or silver lace, cocked hats, and canes, not forgetting under-clothes of costly velvet, and silver buckles at knee and instep. In the pride of their wealth and birth, they could be compassed, we believe, to no race of men but to the merchant princes and nobles of Venice. In fact, they formed among themselves a class distinct from all their fellow townsmen; a sort of mercantile aristocracy. Such were the walk-shaws, the Crosses, the Sterlings, and the Glasfords, of whom it is recorded by the tradition of Glasgow, that they usually walked upon a particular side of the Tron-gate, and took it ill if any inferior person presumed to approach or jostle them. They considered it a vast condescension to a shopkeeper or retailer if they acknowledged him in passing upon the street; and if they were graciously pleased to walk a little way with him along the pavement, they thought they had put him in a fair way for making his fortune. Though this superciliousness of manner be long since gone, and though they prevail throughout the community of Glasgow, that system of equality already noticed, society is not altogether deficient now, any more than formerly; in what may be considered an aristocracy. Among the active manufacturers of Glasgow are to be found men of prodigious wealth, and, at the same time, highly elevated and enlightened minds, who form a sort of nobility. These men, though in general raised from a very humble rank in life, display a munificence of disposition, and a proud feeling of honour in their dealings which might add lustre to coronets and garters. It is perhaps their noblest characteristic, that whatever may be their superiority over the rest of the citizens in point of capital, they exhibit no disposition to withdraw themselves from, or to use other language, lord it over their less eminent brethren. They, on the contrary, disdain not to attend daily to the minutest details of their business, and, on the agitation of any public measure, are usually the first to take an interest in it, and the most active in carrying it into effect. Altogether, their public spirit and their talent, their well-won and well used wealth, their greatness and their humility, entitle them to the admiration of even those who may be least disposed to applaud greatness in the first generation.

ALL Persons having any demands against the estate of HENRY VAYASOUR, Esquire, late of Fredericton, in the County of York, deceased, are requested to render their accounts duly attested within three months from this date—and all those indebted to the said Estate are requested to make immediate payment to

WILLIAM GROSVENOR, } Administrators.
JOHN A. BECKWITH, }
WILLIAM N. AKERLY, }
Fredericton, 21st May 1833.