

The assets and present property of the Society may be estimated as follow : viz.

	£.	s.	d.
Balance in the hands of the Treasurer	116	16	5
Arrears, January 30, 1837.			
1 contribution of five years' standing	£10	10	0
1 ——— of four ditto	8	8	0
7 ——— of three ditto	44	2	0
7 ——— of two ditto	29	8	0
22 ——— of one ditto	46	4	0
2 admission fees and first year's contributions, at four guineas each, new Fellows.....	8	8	0
6 ditto and ditto, at three guineas each ditto	18	18	0
£1431, 13s. 4d. $3\frac{1}{2}$ per Cent stock } valued at about.	1850	0	0
£500, 3 per Cent ditto }			
Unsold Memoirs.			
Various astronomical instruments, books, prints, &c.			
2 gold medals unappropriated.			
2 silver ditto ditto.			

The progress and present state of the Society, with respect to the number of its Fellows and Associates, may be seen from the following abstract, continued from the Report of last year : viz.

	Compounded.	Annual Contributors.	Non-resident.	Patron, and Honorary.	Total Fellows.	Associates.	Grand Total.
February 1836	66	117	99	5	287	37	324
Since elected.....	1	17	...	1	19	...	19
Deceased	-1	-2	-3	...	-6	-1	-7
Resigned	...	-2	...	...	-2	...	-2
Removals	+1	-1	...	...	...	...	...
Reinstated	...	+1	...	...	+1	...	+1
February 1837	67	131	95	6	299	36	335

It is always a source of regret to the Council, in these annual statements, to have to recur to the loss which the Society has sustained by the decease of any of its distinguished members or benefactors. Amongst the deaths in the past year, the Society has to deplore, on the home list, the loss of Mr. Pond, Lieut. Murphy, Capt. Horsburgh, Mr. Ramage, and Professor Farish, together with that of M. Gambart, one of the associates.

Mr. Pond was born in London about the year 1767. His father realised in trade a fortune sufficient to enable him to retire in the prime of life, and to settle at Dulwich, where he passed the remainder of his days. When about seven years old, Mr. Pond was sent to school, under the Rev. Mr. Garrow, at Hadleigh, near Barnet, and, two or three years afterwards, to Mr. Cherry, then

master of the free grammar-school at Maidstone. Mr. Cherry was afterwards head master of Merchant Tailors' School.

After the age of fourteen, he resided at home with his family, and attended as a private pupil Mr. Wales, then mathematical teacher at Christ's Hospital, better known as the nautical astronomer who accompanied Capt. Cook in his voyages of discovery. To Mr. Wales, Mr. Pond remarked an appearance of discrepancy in the Greenwich Observations, implying some imperfection in the instruments, but his suggestion was, naturally enough, neglected by the veteran mathematician, himself a friend and admirer of Dr. Maskelyne. At a subsequent period, Mr. Pond verified his early suspicion.

At sixteen he was entered at Trinity College, Cambridge, with a particular introduction to Dr. Waring, the Lucasian professor of mathematics. Mr. Jones was his public, and the late Professor Lax his private tutor. Unfortunately, his attention was not directed to the studies of the university as steadily as it should have been. His mathematical taste and talents were of a high order, and so esteemed by his fellow-students; but he had all along been extremely fond of chemistry, and this distracted his application to geometry. He had erected a furnace and laboratory at his father's house; and at Cambridge he attended with a delight, which he never forgot, the lectures of Dean Milner, who then filled the chair of chemistry with great ability. It is more to our purpose to notice that he was one of three students who united to induce the Plumian professor, Mr. Vince, to give a course of lectures on practical astronomy.

His health, however, gave way, and a severe pulmonary attack compelled him to seek a warmer climate. He spent two or three years in the south of France and in Spain, and then returned to college, where, during a residence of two or three years, he formed many valuable friendships, which were only dissolved by death. To this part of his life he always reverted with great pleasure; and among her numerous sons, Trinity College had none more zealous and affectionate than Mr. Pond. A second attack of illness obliged him to go abroad, and he resided for some time in Portugal, Constantinople, and Egypt. On his return he settled at Westbury, in Somersetshire.

He had become possessed of a very beautiful altitude and azimuth circle by Troughton, and with this instrument he undertook a series of observations, which, with the conclusions deduced from them, are published in the *Philosophical Transactions* for 1806. In this important memoir he proved, beyond the possibility of doubt, *that the Greenwich quadrant had changed its form since it was erected by Bird and used by Bradley*.* This had been suspected before, partly on account of the difference found between the distances of the two solstices from the equator. The subject was, however, so much complicated with refraction, and the then

* Mr. Troughton shewed this opinion to be true, by actually measuring several radii and chords with an optical beam compass. The middle of the arc was found to be flattened and brought nearer to the centre.

fashionable repeating circle so oddly confirmed this apparent difference (although no physical cause could be assigned for its existence), that we may fairly consider Mr. Pond's memoir to have been the first *conclusive* evidence against the quadrant, and that which led to a change in the form of the declination instrument at Greenwich and elsewhere. He was elected a fellow of the Royal Society in February 1807, and married the same year.

After the publication of this investigation, Mr. Pond resided for some time in London, where he continued to occupy himself with practical astronomy; and, on the death of Dr. Maskelyne in 1811, was appointed astronomer-royal. The instruments which Mr. Pond found at Greenwich were those erected for Bradley sixty years before: the quadrants, now deformed by the yielding of their frames; the transit, which had, from some cause, ceased to describe a true circle; and the zenith sector. The only accurate "foundations" of astronomy, were Maskelyne's right ascensions of 36 principal stars, and the zenith distances of γ *Draconis*. The mural circle, which had been previously ordered, came into Mr. Pond's possession in 1812, but the mode of using it, and the defects, or rather the accidents, to which the new instrument was liable, were to be discovered, and it was indeed fortunate that this *experiment* fell into his hands. Mr. Pond saw, almost intuitively, the vast superiority of this over every preceding form of the declination instrument, and for some years he, and the artist who constructed it, were, perhaps, the only persons who did clearly see, and broadly assert, that the operation of a circle does not depend upon having a bearing on each side, or a complete axis.* The gigantic transit was erected in 1816, and it is from this epoch we may date correct catalogues in Right Ascension and in North Polar Declination of English staple.

A mural circle by Mr. Thomas Jones, which was intended for the Cape of Good Hope, was sent in 1825 to Greenwich, that it might previously be tried and verified. In the course of this inquiry, Mr. Pond hit upon his method of combining two circles, so as to form one instrument, which he always deemed to be a most important improvement. At his earnest entreaty, he was allowed to keep the second circle, which, with its prototype, continues to adorn the Royal Observatory. The 25 feet zenith tube was only completed in 1833, and a very ingenious method of turning it to the best account, and of eliminating the errors of the measuring screw, was adopted by Mr. Pond; but some defects in the mechanism, and difficulties in equalising the temperature of the room (which are now understood to be overcome) have hitherto prevented the performance of this noble instrument being altogether satisfactory.

The annual parallax of some of the brightest of the fixed stars

* Those who wish thoroughly to understand the mural circle, should examine Mr. Pond's memoirs, and the volumes of the *Greenwich Observations*. Some account may be found both of the instrument, and of Mr. Pond's mode of using it, in the *Penny Cyclopædia*, article "Circle."

had been investigated by Dr. Brinkley; and, from a considerable series of careful observation, he determined the parallax of α *Lyrae*, α *Aquilæ*, *Arcturus*, and α *Cygni*. This result was not confirmed by Mr. Pond, who declared the quantity of parallax discovered by Dr. Brinkley to be inadmissible, and contradictory to the results of the mural circle. Mr. Pond supported this opinion by observations on α *Cygni* and β *Aurigæ*, with a fixed telescope, used to measure differences. Further observations convinced Dr. Brinkley that the amount of parallax was sensible, and he attempted to shew that it was not inconsistent with the data of the Greenwich instrument. Both astronomers remained, as might have been expected, in their original opinions; for the whole inequality, if true, is too small to be perceived, except in masses of favourable and careful observations. It is to their credit, that neither, in this debate, forgot the respect due to his opponent or to himself, and that they differed decidedly and positively, without losing the language or temper of gentlemen and philosophers.* The opinion of the present day seems to be, that though there must be some parallax, its existence was not *proved* by Dr. Brinkley, and that Mr. Pond was justified in denying *that any amount of parallax which is sensible in our present instruments had been detected*. The discovery of the distance of any fixed star seems to be yet a desideratum in astronomy. The Royal Society gave the Copley medal in 1827, to Mr. Pond, for his various papers and observations on subjects of astronomy. He had received the Lalande medal in 1817 from the Academie des Sciences, of which he was a corresponding member.

For several years Mr. Pond was subject to very painful and harassing complaints. He resigned his office towards the close of 1835, when a retiring pension of 600*l.* was granted him for life. He died at Blackheath, on the 7th September, 1836, and was buried at Lee, in Kent, in the same tomb with his predecessor Halley.

An examination of Mr. Pond's observations and memoirs, during the twenty-four years he held his arduous and important office, will shew that neither his feeble health, nor repeated discouragements, cooled his zeal for the public service, or his love for practical astronomy. His friend Troughton declared, that "a new instrument was at all times a better cordial for the astronomer-royal than any which the doctor could supply;" and certainly, neither pain, nor bodily weakness, could keep Mr. Pond in a prudent state of rest, when he had to bring a new instrument into work, or to make an interesting observation. As a handler of astronomical instruments, the same competent authority declared, "that Mr. Pond had, within his knowledge, no equal or rival except Captain Kater;" and his excellence as an observer is shewn by his use of the Westbury circle, and by the early volumes of the *Greenwich Observations*, many of which he personally made.

* This controversy on parallax is well worth the attention of the practical astronomer. See *Philosophical Transactions*, 1810, and subsequent volumes, and the 12th volume of the *Transactions of the Irish Academy*.

The mode of observation established by Mr. Pond, is now substantially practised in every well-conducted British observatory, and may be said to be substantially different from any which preceded it. Besides the peculiar methods which are of his invention, he first laid down and practised the broad principle of multiplying observations, and relying upon masses,* only rejecting, and that very sparingly, such as are manifestly erroneous. It is not too much to say, that meridian sidereal observation (which excludes the Herschelian branch of astronomy) owes more to him than to all his countrymen put together, since the time of Bradley. In 1833, Mr. Pond supplied a want which had been long felt, by the publication of a truly standard catalogue of 1113 stars.

The application of revolving or shifting microscopes to circles moving in azimuth, was suggested by Mr. Pond to Troughton, and executed first in the Westbury circle. He also applied the *repeating table* to the theodolite, and in both these instances procured nearly all the advantages of the circle of Borda, without any of the imperfections of that instrument. The instruments which were constructed by different artists under Mr. Pond's direction, are remarkable for their symmetry, strength, and elegance. Of the mural transit, recommended by him for Paramatta and for Oxford, it is yet too early to speak from actual experience; but this form, which is a return to the *rota meridionalis* of Röemer, combined with the solid fixing of the microscopes, seems the most promising which has yet been given to the transit circle.

It has already been mentioned, that Mr. Pond's attention to mathematics when at Cambridge was not equal to his opportunities, nor such as might have been expected from his talents and early education. This was a subject of regret to him in after life; but it must be remembered, that, at that time, mathematico-physical research was almost unknown in this country, and that the then course of reading at Cambridge (though it might and did, in Brinkley and Woodhouse, lead to better things), was not such as to give any immediate grasp upon the physical constitution of the universe. Mr. Pond had, from early youth, all the mathematics strictly necessary for a practical astronomer, and was perfectly well acquainted with *plane* astronomy, in distinction to *physical*. This was quite sufficient for the branch of astronomy to which he particularly devoted himself, viz. the determination of the places, corrections, motions, &c. of the fixed stars,—the basis on which all ulterior progress must be founded. He was perfectly free from that narrowness of comprehension which too often marks the dexterous manipulator. He always felt and expressed the

* When the present board of visitors was instituted, a sub-committee was appointed to suggest any alterations in the Royal Observatory which might seem advisable. The computation and reduction books were laid before them, and they were agreeably surprised to find such order and extent of calculation. Every observation was, and always had been, carefully reduced. The partial results, now published in the *Greenwich Observations*, had been omitted solely on account of the expense.

highest respect for those who were to take up the subject where he laid it down, and were destined to pierce into the future by the knowledge which he could afford them of the past. It is some corroboration of this point of Mr. Pond's character, that, besides his memoirs and observations, the only work he ever published is a translation of the *Système du Monde* of La Place. Rare and fortunate individuals may be sometimes found who unite the requisites which form a perfect astronomer,—delicacy of organ, mechanical skill, mathematical knowledge and invention, and unwearied industry; but if the choice of an astronomer-royal lay between a skilful practical observer (not a noter of phenomena) and a deep geometer, no one could doubt where that choice should fall. In the circle of Mr. Pond's contemporaries, can one be pointed out who would have filled the office as ably as he? Let any one look at the state of practical astronomy at the Royal Observatory and elsewhere, as he found it, and as he left it, and then answer the question.

Mr. Pond, though independent in temper, was remarkably mild and gentle in his manners; and his health and disposition, together with his attention to his office, and his dislike to every thing like contention, which almost amounted to a failing, kept him very much at home, and out of the reach of general acquaintance. His memoirs were short and compressed; and as they *supposed* the reader to be an astronomer, and consisted chiefly of facts tabularly arranged, they were dry, and absolutely unintelligible on a careless or cursory perusal. This invited at different times a good deal of criticism; but it may be said, that of those who thus decided upon the manner in which the astronomer-royal performed his duty, there was hardly one whose previous publications could be cited to prove his acquaintance either with the principle of Mr. Pond's methods, or even with the routine of his practice. Upon one occasion, when a formal charge was made against the accuracy of his Observations, and the fidelity with which they were printed, a very spirited vindication of the *Greenwich Observations* was offered by our illustrious associate Bessel (*Astronomische Nachrichten*, No. 84), and, coming from such authority, this stopped all further discussion.

The scattered remarks which are to be found in the volumes of the *Greenwich Observations* and in Mr. Pond's memoirs inserted in the *Transactions* of the Royal and of the Royal Astronomical Societies, are full of valuable information, and supply many hints for consideration to the patient and intelligent practical astronomer, who will be compensated for the inconvenience of the form, and the want of arrangement, by the greater clearness and distinctness which original documents always convey. His views, as detailed in conversation, were acute, sound, and philosophical; and those who have enjoyed his society when in tolerable health, will not readily forget it.

Mr. Pond's zeal led him to urge repeated increases of the establishment at Greenwich upon the government, and in the end,