fine canoe in a perfect state of preservation, 11 metres 16 centimetres long, and slightly more than a metre broad. It was dug out and drawn from the marsh by sixty men and eight oxen, under the superintendence of the director of the Museum of Lausanne, and has been placed in the court of the Lausanne Academy, where it is destined to remain.

WE have before us the reports for last year of the two clubs which have for their object the furtherance of the special study of British plants and their distribution over the surface of the islands. The Botanical Exchange Club has been in existence about twenty-five years, and was a continuation of the London Botanical Society. The Secretary sends out each spring a list of the plants that are wanted, and the members, who are about thirty in number, at Christmas send in their parcels and lists of desiderata. All doubtful specimens are submitted to competent referees, and after the distribution is made a report is published on critical forms and extensions of distribution. The most interesting find noticed this year is the discovery of *Herniaria hirsuta*, a plant spread widely through the southern half of Europe, by Mr. Fred. Townsend at Christchurch, in Hampshire. Dr. Boswell identifies the prickly comfrey, which has been so much talked about lately as a forage plant, with the *Symphytum uplandicum* of Nyman. Probably it is really a hybrid between *S. officinale* and *S. aspernum*, as was suggested lately when it was figured by Sir Joseph Hooker in the *Botanical Magazine*. Some curious observations have been made lately tending to show that our wild docks hybridise naturally not unfrequently, like verbascums, geums, primulas, thistles, and epilobias. There is a curious form of *Ophioglossum* (*O. vulgatum*, var. *ambiguum* of Cosson and Germain), which till now has been known in Britain only in the Orkney and Scilly Islands. This year Mr. Chas. Bailey has found it on the Welsh coast between Harlech and Barmouth. The Botanical Record Club has for its object the filling up of the blanks left by Mr. Watson when he traced out in detail the home-distribution of British plants in his "Cybele Britannica." In the report for this year detailed lists are given for Cardiganshire and Peeblesshire, and the only counties for which lists of flowering plants now remain to be drawn up are Flintshire, Wigtonshire, and West Ross. Fourteen pages of the present report are occupied by fresh records for counties already worked up, and the Club is now turning its attention to the distribution of the lower cryptogamia, especially mosses. The registration of flowering plants is in the hands of Dr. F. A. Lees of Wetherby, and of mosses in that of Mr. H. Boswell of Oxford; and the Secretary of both the Clubs is Mr. Chas. Bailey, F.L.S., of Manchester.

MR. BRIAN HOUGHTON HODGSON, F.R.S., has just presented to the Anthropological Institute a valuable portfolio of drawings illustrative of the Eastern Himalayas and Tibet. The drawings have been made by the same Nepalese draughtsman as delineated the zoological drawings which have been presented to the Zoological Society, and this ethnological series comprises and contains in all 521 subjects, including duplicates. A series of crania have been drawn by aid of the camera, Mr. Hodgson remarking "native patience, hand and eye being peculiarly fitted to work that instrument."

ETIENNE MULSANT, one of the most prominent of French entomologists, and librarian to the city of Lyons, died on November 4 at the great age of eighty-four. His earliest publication was the "Lettres à Julie sur l'Entomologie (en prose et en vers)," published in 1830, but for the most part consisting of real love-letters to the lady he afterwards married, and written before he was out of his teens. His writings are most voluminous; but he was best known as the author of a work extending over nearly forty years, on the *Coleoptera* of France, and published (chiefly) in the *Annales* of the Linnean Society of

Lyons. He was also the author of a magnificently illustrated work on Humming Birds, in connection with which he visited London about five years ago.

WE learn that Messrs. Williams and Norgate are about to issue an important work on the Fishes of Great Britain and Ireland by Dr. Francis Day, late Inspector-General of the Fisheries of India. This work deals with their economic uses, modes of capture, diseases, breeding, life-history, &c., with an introduction on the structure of fishes generally, their functions and geographical distribution. The first part appears this month, and is illustrated by twenty-seven plates. The whole will form a work of 700 pages royal octavo, with over 200 plates.

THE exploration of the remains of prehistoric man is being actively carried out in Russia. We have already briefly noticed a contribution to this subject by M. Mereshkovsky, published in the *Izvestia* of the Russian Geographical Society (vol. xvi. No. 2), being a report upon the exploration of caverns and rock-shelters in the Crimea, in the neighbourhood of the Tchatyrdagh Mountain. A great cavern, 145 feet wide and 58 feet deep, was explored close by the Suren town, and M. Mereshkovsky found there the remains of a prehistoric workshop for the manufacture of stone implements, the whole belonging to two distinct periods. The paper by M. Mereshkovsky, published in the *Izvestia*, is accompanied with four tables of drawings of stone implements.

WE notice the following interesting communications which were made at the last meeting of the St. Petersburg Geological Society:—On the motion of downs near Sestroretsk, by M. Sokoloff. The velocity of these downs is about one foot per month.—On the excavations made by water in rivers and springs of Northern Esthonia, especially by the waterfalls near Reval, Yagowal, and Fal; and on the Devonian clays discovered by Prof. Inostrantseff in the cuttings of the new Ladoga canal. The upper parts of the beds of these clays are bent by the action of the ice of the ice period, as has been observed at many places in Great Britain; the peats which cover the glacial formations are full of remains of prehistoric man.

WE can state that the Observatory of Algiers will not remain longer without an astronomical observer. M. Tripiet, who has been appointed director, as has been announced in the French papers, will leave in time for installation at the meeting of the French Association for the Progress of Science in April, 1881.

THE purchaser of the French Siemens patent is preparing to send a tender for establishing an electric railway from the Exhibition to the central parts of Paris.

ABNORMAL VARIATIONS OF BAROMETRIC PRESSURE IN THE TROPICS, AND THEIR RELATION TO SUN-SPOTS, RAINFALL, AND FAMINES¹

II.

Comparison of the Abnormal Barometric Variations with the Sun-Spots

A GLANCE at the barometric and sun-spot curves is sufficient to show that the irregular and frequent fluctuations of pressure are relatively much larger than those of the sun-spots. In order therefore to compare the general course of the barometric curves with that of the sun-spot curve the numbers of Table I. have been further smoothed by taking the means of every nine consecutive quarterly values of the nine-monthly means. The results of this operation are given in the following table, and graphically represented by the dotted curves which are drawn through the continuous ones. All these dotted barometer curves closely resemble each other, except that portion of the Mauritius curve after the year 1865 which shows a tendency to assume an opposite character. They are also very similar to the sun-spot curve, but all of them lag very persistently behind the latter, as will be seen by comparing the points marked with the same capital letters:—

¹ Continued from p. 91.

TABLE II.

Means of every Nine Consecutive Quarterly Values of the Nine-Monthly Means of Solar Spotted Area and Abnormal Barometric Pressure

Year.	Solar spotted area in millionths of visible hemisphere.	Abnormal barometric pressure in thousandths of an inch.						Year.	Solar spotted area in millionths of visible hemisphere.	Abnormal barometric pressure in thousandths of an inch.					
		St. Helena.	Bombay.	Madras.	Calcutta.	Batavia.	Zi-ka-wie.			Mauritius.	Bombay.	Madras.	Calcutta.	Batavia.	Zi-ka-wie.
1841	1							1857	1	161	-15	-2	-5		
	2	396							2	224	-16	-2	-7		
	3	359							3	309	-15	-1	-7		
	4	316							4	422	-11	+1	-5		
1842	1	284	-5					1858	1	543	-4	+3	+12	0	
	2	244	-4						2	669	+3	+5	+15	+4	
	3	216	-3	-6					3	814	+6	+7	+16	+9	
	4	188	-1	-5					4	957	+7	+7	+16	+10	
1843	1	171	0	-4				1859	1	1065	+6	+5	+14	+8	
	2	164	0	-3					2	1145	+3	+4	+12	+6	
	3	161	-1	0					3	1221	+2	+4	+9	+4	
	4	164	-1	-4					4	1289	+1	+2	+7	+2	
1844	1	182	0	-3				1860	1	1325	-2	-1	+2	-1	
	2	208	+2	-5					2	1356	-7	-4	-5	-7	
	3	235	+4	-4					3	1369	-12	-6	-12	-15	
	4	268	+5	-3					4	1347	-16	-8	-15	-17	
1845	1	319	+6	0				1861	1	1296	-17	-8	-17	-16	
	2	378	+7	+2					2	1289	-17	-9	-16	-15	
	3	426	+8	+4					3	1292	-17	-11	-15	-16	
	4	480	+8	+6					4	1292	-20	-15	-17	-17	
1846	1	530	+8	+11				1862	1	1237	-21	-18	-17	-17	
	2	582		+13					2	1161	-22	-18	-17	-18	
	3	658		+14					3	1060	-21	-19	-18	-19	
	4	762		+12					4	983	-21	-18	-19	-19	
1847	1	856		+9				1863	1	930	-19	-16	-18	-18	
	2	911		+6					2	922	-15	-15	-17	-17	
	3	946		+2					3	867	-11	-9	-14	-14	
	4	1005		+3					4	821	-5	-4	-8	-8	
1848	1	1053		-6				1864	1	747	+1	+1	-2	-2	
	2	1080		-9					2	702	+6	+5	+3	+3	
	3	1071	-7	-11					3	668	+11	+8	+11	+11	
	4	1022	-8	-13					4	672	+14	+11	+13	+13	
1849	1	947	-7	-15				1865	1	657	+15	+12	+13	+13	
	2	866	-6	-17					2	618	+15	+12	+14	+14	
	3	804	-4	-17					3	528	+15	+11	+14	+14	
	4	762	-4	-15					4	452	+16	+9	+14	+14	
1850	1	709	-5	-17				1866	1	367	+17	+8	+13	+13	
	2	662	-5	-16					2	308	+17	+8	+12	+12	
	3	626	-6	-16					3	274	+16	+9	+13	+13	
	4	611	-7	-15					4	262	+13	+11	+15	+15	
1851	1	610	-6	-10				1867	1	248	+11	+14	+19	+19	
	2	604	-6	-8					2		+9	+16	+21	+21	
	3	602	-6	-10					3		+8	+18	+23	+23	
	4	598	-7	-11					4		+7	+21	+23	+23	
1852	1	585	-7	-10				1868	1		+7	+22	+22	+22	
	2	560	-6	-8					2		+8	+22	+20	+20	
	3	532	-5	-6					3		+9	+19	+18	+17	
	4	498	-1	-2					4		+11	+15	+13	+13	
1853	1	452	-7	-1				1869	1		+12	+10	+8	+8	
	2	392	-7	+1					2		+14	+7	+4	+6	
	3	346	-6	+2					3		+16	+2	+1	+2	
	4	312	-5	+4					4		+18	-3	-1	-3	
1854	1	281	-4	+6				1870	1		+20	-6	-3	-6	
	2	239	-12	-8					2		+22	-8	-5	-8	
	3	191	-8	-10					3		+23	-7	-6	-10	
	4	147	-6	-11					4		+22	-6	-3	-9	
1855	1	113	-7	-11				1871	1		+21	-5	0	-9	
	2	93	-8	-10					2		+19	-7	0	-10	
	3	82	-10	-11					3		+16	-7	0	-11	
	4	70	-11	-12					4		+13	-7	-11	-12	
1856	1	57	-11	-12				1872	1		+10	-5	-10	-11	
	2	52	-12	-10					2		+6	-4	-10	-9	
	3	67	-14	-11					3		+4	-2	-9	-8	
	4	106	-1	-12					4		+2	-2	-10	-7	
1857	1							1873	1		0	-10	+2	-5	
	2								2		+1	-9	+2	-3	
	3								3		+2	-8	+3	-1	
	4								4		+2	-8	+2	-3	

TABLE II. (Continued).—

Year.	Solar spotted area in millions of visible hemisphere.	Abnormal barometric pressure in thousandths of an inch.					
		Mauritius.	Bombay.	Madras.	Calcutta.	Batavia.	Zi-ka-wie.
1875	1		0	-10	0	-4	-8
	2		-1	-12	-2	-6	-9
	3		-1	-13	-3	-7	-9
	4		+2	-10	-1	-4	-8
1876	1		+6	-5	+2	+1	-7
	2		+13	+3	+7	+7	-6
	3		+16	+10	+13	+13	-3
	4		+20		+17	+18	+2
1877	1		+23		+24	+23	+8
	2		+25		+31	+26	+13
	3		+23		+37	+26	+16
	4		+18		+38		+16
1878	1		+11		+32		+14
	2		+7		+26		+13
	3		+1		+21		+12
	4		-4		+16		+9
1879	1		-9		+11		
	2						
	3						
	4						

The epochs of maximum and minimum barometric pressure and of minimum and maximum sun-spot area, as determined from the dotted curves by the graphic method, are given in the following table:—

Epochs of Maximum and Minimum Barometric Pressure and Solar Spotted Area

Solar spotted area.	Barometric pressure.						
	St. Helena.	Mauritius.	Bombay.	Madras.	Calcutta.	Batavia.	Zi-ka-wie.
Min. in July 1843.	Max. in Nov. 1845.	—	—	Max. in Aug. 1845.	—	—	—
Max. in May 1848.	—	—	Min. in Sept. 1848.	Min. in Dec. 1848.	—	—	—
Min. in April 1856.	—	Max. in Oct. 1858.	Max. in Aug. 1858.	Max. in Aug. 1858.	Max. in Sept. 1858.	—	—
Max. in June 1860.	—	Min. in April 1862.	Min. in Aug. 1862.	—	Min. in Jan. 1863.	—	—
Min. in February 1867.	—	?	Max. in May 1868.	—	Max. in Nov. 1867.	Max. in May 1868.	—
—	—	?	Min. in Sept. 1870.	—	Min. in Nov. 1870.	Min. in Dec. 1870.	—
—	—	—	Max. in April 1877.	—	Max. in Sept. 1877.	Max. in May 1877.	Max. in Sept. 1877.

The mean epochs are given below and compared with those of the solar spotted area.

Mean Epochs of Barometric Pressure compared with the Corresponding Epochs of Solar Spotted Area¹

Solar spotted area.		Barometric pressure.		Difference.	
a.		b.		b-a.	
Year.	Month.	Year.	Month.	Year.	Month.
Min. 1843	... 7.5	Max. 1845	... 10.0	+ 2	... 2.5
Max. 1848	... 5.5	Min. 1848	... 11.0	+ 0	... 5.5
Min. 1856	... 4.5	Max. 1858	... 9.2	+ 2	... 4.7
Max. 1860	... 6.5	Min. 1862	... 8.8	+ 2	... 2.3
Min. 1867	... 2.5	Max. 1868	... 3.5	+ 1	... 1.0
		Mean	...	+ 1	... 8.0

From this comparison it appears that the epochs of maximum and minimum barometric pressure lagged behind the corresponding epochs of minimum and maximum solar spotted area at an interval varying from above six months to nearly two and a half years, or at an average interval of about one year and eight months.

Making use of this result and comparing points of the pressure curves with points of the solar curve several months earlier, it will be seen that even the minor peculiarities of the pressure curves from 1863 to 1868 do bear some resemblance to the subordinate features of the sun-spot curve from 1862 to 1867. What appear to be corresponding points have been marked with corresponding letters. It is remarkable that this part of the sun-spot curve is the very portion which has been most accurately determined by means of the Kew photoheliograph.

Comparison of the Abnormal Barometric Variations with Past Famines.—According to the Report of the Famine Commission the famine of 1876-78 in Southern India was the most widespread and severe of any which have occurred in India during the present century, and on reference to the curves it will be seen that the abnormal barometric pressure during those years was the highest on record. In the year 1878 a famine occurred in the North-West Provinces also, in consequence of a deficiency of rain in the previous year.

The famine next in severity to that of 1876-78, and of even greater extent, was the one of 1868-69, which affected Rajputana and the North-West Provinces. The curves show that this also was accompanied or immediately preceded by a wave of high barometric pressure, which reached its maximum near the middle of the year 1868.

The next on the list of severe famines is that which occurred in Orissa in the years 1865-66, and it will be seen that this also was attended by a wave of high pressure which slowly passed over India in the years 1864-65.

The less extensive Behar famine of 1873-74 was also accompanied by a small wave of high pressure, which, judging from the curves for Mauritius, Bombay, Madras, and Batavia, reached its maximum height towards the end of 1873.

The famine of 1860-61 in the North-West Provinces was also preceded by a wave of high pressure in the year 1859, although the failure of the rains which induced this famine did not occur till the following year.

The above mentioned famines include all the severe ones that have occurred in India since 1841, the year from which barometric data exist; and the waves of high barometric pressure which have been mentioned in connection with them include all that have been observed except two, viz. the one in 1855 and the one in 1845, both of which, though not immediately followed by actual famine, were nevertheless accompanied by deficient rainfall both at Madras and Bombay, the fall at the former station being 67 and 78 per cent. of the average in 1855 and 1845 respectively, and at the latter station 58 and 77 per cent. in the same years. Between the years 1832 and 1840, during which the solar spotted area was accurately observed, but for which period I have no barometric data, two other severe famines occurred, viz. the Gantur famine of 1833, and the famine of 1837-38 in Northern India; and it is worthy of note that the first of these occurred soon after the sun-spots had somewhat suddenly fallen to a minimum in 1832, and when, therefore, the barometric pressure would assumably be high, the second soon after the great and sudden diminution of spots which took place early in the year 1837. This last occurrence was very similar to the great decrease of spots observed in 1863, on which occasion

¹ The numbers 1, 2, 3, &c., under the heading "Month," refer to the months January, February, March, &c., respectively, and the decimals of a month are reckoned from the beginning of the respective months.

the decrease was followed by the wave of high pressure which preceded the Orissa famine.

Hence it appears that widespread and severe famines are generally accompanied or immediately preceded by waves of high barometric pressure.

Means whereby future famines may possibly be foreseen.—If the conclusions arrived at from the above comparisons of abnormal barometric variations, sun-spots, and past famines be admitted, it is clear that they at once present the means whereby future famines may possibly be foreseen. The conclusions are briefly:—

1. That variations of the solar spotted area are succeeded many months afterwards by corresponding abnormal barometric variations.

2. That abnormal barometric variations in the tropics travel at a very slow rate round the earth from west to east, arriving at westerly stations several months before they reach more easterly ones.

3. That famines follow in the wake of waves of high barometric pressure.

Hence it follows that there are two methods by which early intimation of the approach of those meteorological disturbances which are attended by famines may possibly be obtained—

1. By regular observation of the solar spotted area, and early reduction of the observations, so as to obtain early information of current changes going on in the sun.

2. By barometric observations at stations differing widely in longitude, and the early communication of the results to stations situated to the westward.

With regard to the first of these methods it is sufficient to state that the whole subject of solar observations is now being investigated by a committee of scientific gentlemen in London, and we may therefore hope that the all-important information which solar observations are capable of affording will ere long be at our disposal; but with regard to the second method, viz., that of barometric observations at stations differing widely in longitude, it is to be regretted that no observatories of long standing situated in suitable localities to the westward of Bombay at present exist, except possibly at the very distant station of Havanna in Cuba. The observatory at St. Helena appears to have been closed in the year 1847, after working continuously for about seven years.

The most suitable localities for barometric observations for the purpose in view are insular stations far removed from the disturbing influences of the large continents and near the equator, such as the Seychelles, St. Helena, and Ascension, but these appear to be at present unoccupied by permanent observatories, while the wide expanse of the Pacific, which is probably the most suitable portion of the earth's surface for investigations of this kind, appears to be entirely unrepresented by any fixed observatory on any of its numerous islands, such as the Galapagos, Sandwich, and Fiji Islands. An observatory has however lately been established at Zanzibar on the East Coast of Africa, from which very valuable observations may be expected if it should continue at work for any great length of time; and another has, I believe, been started at Aden: but as these stations are both situated on the borders of extensive continents, they are not so suitably located as the stations previously mentioned.

It would therefore be necessary, in order to utilise to the fullest extent the second method of foreseeing the approach of a meteorological disturbance of the kind which would probably be attended by famine, that special arrangements should be made for the registration of the needful observations at some, if not all, of the stations that have been referred to; and that the information thus afforded should be rapidly communicated from the more westerly to the more easterly stations.

F. CHAMBERS,
Meteorological Reporter for
Western India

Bombay, September 4

POSTSCRIPT.—In order to determine numerically the intervals of time at which the barometric variations of one station have lagged behind those of another, and behind corresponding minor variations of the sun spots, the times at which the continuous curves cross the dotted ones have been marked off by the graphic method for corresponding crossing points of the different curves, giving the first set of times and intervals in each of the following tables. The same thing has been done with regard to the times at which the continuous curves cross the respective zero lines,

giving the second set of times and intervals in each of the tables. As the average pressures for Batavia and Bombay have not been calculated from the observations of the same years, and as the zero line of the Batavia curve is on this account relatively displaced by 0.04 of an inch in the upward direction, a new zero line has been drawn so as to make the times at which the continuous curve crosses the zero line comparable with those for Bombay. The approximate longitudes of the stations and their differences are also given in the tables.

Station ...	St. Helena.		Madras.		Madras minus St. Helena.
Longitude.	5° 44' W.		80° 14' E.		+ 25° 58'.
First Set.	Year.	Month.	Year.	Month.	Month.
	1842	4'1	1842	9'7	+ 5'6
	1843	11'6	1843	12'8	+ 1'2
Second Set.	1846	3'2	1846	7'1	+ 3'9
	1842	6'8	1842	11'5	+ 4'7
	1843	11'4	1844	1'9	+ 2'5
	1846	6'7	1846	9'1	+ 2'4
				Mean	+ 3'38

Station ...	Mauritius.		Calcutta.		Calcutta minus Mauritius.
Longitude.	57° 31' E.		88° 25' E.		+ 30° 54'.
First Set.	Year.	Month.	Year.	Month.	Month.
	1856	3'6	1856	6'5	+ 2'9
	1857	5'2	1857	7'3	+ 2'1
Second Set.	1858	10'5	1858	10'1	- 0'4
	1859	9'1	1860	1'0	+ 3'9
	1861	4'7	1861	9'0	+ 4'3
	1862	4'1	1862	9'5	+ 5'4
	1863	8'0	1864	6'0	+ 10'0
	1856	1'1	1856	4'7	+ 3'6
	1858	9'0	1858	6'8	- 2'2
	1859	9'8	1859	11'0	+ 1'2
	1863	10'5	1864	5'9	+ 7'4
				Mean	+ 3'47

Station ...	Bombay.		Calcutta.		Calcutta minus Bombay.
Longitude.	72° 48' E.		88° 25' E.		+ 15° 37'.
First Set.	Year.	Month.	Year.	Month.	Month.
	1856	2'5	1856	6'5	+ 4'0
	1857	7'2	1857	7'3	+ 0'1
	1858	5'0	1858	2'8	- 2'2
	1858	8'9	1858	10'1	+ 1'2
	1859	7'5	1859	10'7	+ 3'2
	1861	7'5	1861	9'0	+ 1'5
	1862	6'7	1862	9'5	+ 2'8
	1863	11'1	1864	6'0	+ 6'9
	1865	1'8	1865	9'3	+ 7'5
	1866	1'1	1866	10'2	+ 9'1
	1867	1'5	1867	7'0	+ 5'5
	1867	12'8	1867	10'8	- 2'0
	1869	6'9	1869	8'7	+ 1'8
	1870	6'9	1870	7'1	+ 0'2
	1876	10'1	1876	9'3	- 0'8
	1878	5'4	1878	8'8	+ 3'4

Second Set.	1856	3.1	1856	4.7	+ 1.6
	1857	7.8	1857	9.1	+ 1.3
	1859	9.2	1859	11.0	+ 1.8
	1863	11.5	1864	5.9	+ 6.4
	1869	8.2	1869	9.2	+ 1.0
	1876	4.8	1876	7.8	+ 3.0
	1878	5.9	1878	10.5	+ 4.6
			Mean		+ 2.69

Station ...	Bombay.		Batavia.		Batavia minus Bombay.
Longitude.	72° 48' E.		105° 50' E.		+ 34° 2'.
First Set.	Year.	Month.	Year.	Month.	Month.
	1867	12.8	1868	2.1	+ 1.3
	1869	6.9	1869	8.5	+ 1.6
	1872	4.5	1872	5.6	+ 1.1
	1873	5.8	1873	6.8	+ 1.0
	1874	5.4	1874	6.7	+ 1.3
	1875	3.7	1875	4.9	+ 1.2
	1875	9.7	1875	10.0	+ 0.3
	1876	10.2	1876	9.8	- 0.4
Second Set.	1869	8.1	1869	10.0	+ 1.9
	1873	6.2	1873	7.5	+ 1.3
	1874	5.7	1874	7.5	+ 1.8
	1875	4.0	1875	6.0	+ 2.0
	1875	11.2	1875	9.7	- 1.5
	1876	4.9	1876	6.1	+ 1.2
	1878	5.9	1878	7.9	+ 2.0
			Mean		+ 1.07

	Solar spotted area.		Bombay barometer.		Month.
	Year.	Month.	Year.	Month.	
First Set.	1862	3.4	1862	6.7	+ 3.3
	1863	1.3	1863	11.1	+ 9.8
	1863	11.7	1865	1.8	+ 14.1
	1864	12.7	1866	1.1	+ 12.4
	1865	9.4	1867	1.5	+ 16.1
	1866	6.0	1867	12.8	+ 18.8
			Mean		+ 12.4

	Solar spotted area.		Madras barometer.		Month.
	Year.	Month.	Year.	Month.	
First Set.	1849	6.7	1849	12.8	+ 6.1
	1850	11.2	1851	5.4	+ 6.2
			Mean		+ 6.1

It will be seen that in the great majority of cases the barometric waves reach the westerly station several months before they arrive at the more easterly one, but that the rate of progression of these waves across the Indian Peninsula appears to be much slower than across the open ocean to the southward.

F. C.

THE ROYAL SOCIETY—ADDRESS OF THE PRESIDENT¹

DR. SPOTTISWOODE began by referring to the losses which the Society has sustained by death during the past year:—Prof. Miller, Dr. Sharpey, Mr. Lassell, Prof. Ansted, Lord Belper, Mr. E. W. Cooke, and Sir Benjamin Collins Brodie.

The Society's finances generally are, as the balance-sheet will show, in a healthy condition, and appear to justify the hope that they will suffice for the large claims upon them for printing our publications. The address then proceeds:—

Although we are more concerned, Dr. Spottiswoode said, with the quality than with the quantity of communications made to the Society, it may not be without interest to observe that the number of papers received this year has been in excess of that in any previous year, at all events since 1872, inclusive. The following is a table of the numbers during the last nine years:—

1872	...	...	...	...	99 papers received.
1873	...	...	...	...	92 " "
1874	...	...	...	...	98 " "
1875	...	...	...	...	88 " "
1876	...	...	...	...	113 " "
1877	...	...	...	...	97 " "
1878	...	...	...	...	110 " "
1879	...	...	...	...	118 " "
1880	...	...	...	...	123 " "

and we may conclude that these have contained good matter from the fact that of the *Philosophical Transactions* for the current year Parts i. and ii., already published, contain no less than 900 pages and thirty-three plates.

Dr. Spottiswoode then referred to the satisfactory results of the change of time of meeting of the Society, and went on to speak of the death of Mr. Henry White, who for many years was chief assistant in the compilation of the great Catalogue of Scientific Papers. At an earlier stage of the work, Dr. Spottiswoode went on to say, his loss would have been still more serious; but in a long course of training he succeeded so well in imparting his own careful and methodical mode of work to those under him, that the Council felt justified in making trial of his son to take his place. With the result of this trial, as shown in continuing the preparation of a new edition of the catalogue of the Society's Library, the Council has reason to be satisfied. Of this new edition, the first portion, 220 pages, containing our large collection of *Transactions* and *Proceedings* of Academies and Societies, and other scientific periodicals is in type, and will shortly be printed off. The verification of titles of our scientific books generally is so far advanced as to warrant the expectation that a large instalment of this portion of the catalogue will soon be in the printer's hands; after which we anticipate no further delay.

In regard to the Library, a question has arisen as to how far purely literary works, which occupy much space, should be retained. Among them there are doubtless some which add neither to the utility nor to the scientific importance of our Library, but there are also some early printed books, bibliographical treasures, which are worthy of a place in any collection. It is proposed to have these carefully put in order, and to place them in a case by themselves. Among these, there may be mentioned:—

Caxton's Chaucer, 1480.
 Pynson's Chaucer, 1492.
 Speght's Folio Chaucer, 1598.
 Ciceronis Officia et paradoxa, Fust, 1466, vellum.
 The generall historie of Virginia, Lond. 1632.
 Bonifacius. Sextus decretalium liber. Ven. 1566-7
 Plautus, 1482. Seneca, 1490.
 Ovid, 1485. Statius, 1490.
 Plutarch, 1485. Herodotus, 1494.
 Homer, 1488.

For bringing into prominence these as well as other features of our miscellaneous, *i.e.* non-scientific, books, we are greatly indebted to the care and knowledge brought to bear on the subject by Mr. Tomlinson, and by our treasurer.

Although it is doubtless undesirable to propose, without sufficient cause, alterations in our statutes, or even in our practice, it is still often worth while from time to time to discuss questions involving such alterations in order that we may be prepared for a

¹ Address of William Spottiswoode, D.C.L., LL.D., the President, delivered at the Anniversary Meeting of the Royal Society on Tuesday, November 30, 1880