The means for the parallaxes thus obtained for the four independent sets of measures of 61^1 and 61^2 Cygni respectively are as follows :—

For 61^1 Cygni, 0″·438 ; for 61^2 Cygni, 0″·441.

Prof. Pritchard explains that this determination is to be regarded as provisional only, and that the work will be continued to the end of the annual cycle. The method certainly appears to be a most promising one, and the publication of the full details of the Oxford researches will be awaited with interest.

Observations of Variable Stars in 1885.—No. 151 of Gould's *Astronomical Journal* contains Mr. Edward Sawyer's observations of variable stars made in 1885. The following epochs of maximum brightness were observed :—R Andromedæ, 1885 January 10 ; R Leonis, about 1884 December 24 ; R Leo. Min., 1885 June 26 ; R Boötis, 1885 May 16 ; R Ursæ Majoris, July 1 ; S Ursæ Majoris, May 7 ; U Herculis, July 8 ; *g* Herculis, June 4, August 2 (?), October 16 ; S Coronæ, May 11 ; χ Cygni, 1886, January 10 ; R Scuti, 1885 June 17, August 10 (?), and November 16 ; Mira Ceti, February 10 ; R Aquarii, January 4. β Pegasi and α Cassiopeiæ appeared constant, and ρ Persei nearly so, during the observations. R Coronæ was well observed, and showed numerous but slight fluctuations of light. An unusually bright phase, 6·2 m., occurred on August 15, followed by a rather faint minimum, 7·4 m., on October 13. T Monocerotis was well observed : last minimum, April 20, 15h. 26m. Camb. M.T. ; last maximum, April 27, 15h. 55m. U Monocerotis was observed at minimum on April 1, and at maximum on April 14. W Cygni was observed at maximum on August 20 and December 16, giving a period of 118 ± days, and at minimum on October 30.

The Alleged Ancient Red Colour of Sirius.—Mr. Lynn, in the current number of the *Observatory*, shows that the evidence for this star having formerly been of a red colour is much less strong than has frequently been supposed. Prof. Schjellerup had pointed out in his notes on his translation of Sûfi, that the designation ὑπόκιρρος applied to the star in our editions of Ptolemy was probably an error of transcription for σείριος ; whilst it had been suggested long ago that, for the word "rubor" which we find used in reference to it by Seneca, we should really read "fulgor." It certainly has always seemed improbable that a star of such vast dimensions as Sirius must be should have so entirely changed its colour in less than 2000 years.

Bright Lines in Stellar Spectra.—Mr. O. T. Sherman, in No. 149 of Gould's *Astronomical Journal*, brings together various observations of the bright lines which have been observed by Vogel or Copeland in the spectra of β Lyræ, γ Argûs, R Geminorum, and some smaller stars, and compares them with Hasselberg's observations of the low-temperature spectrum of hydrogen and the high-temperature spectrum of oxygen, and draws the inference that the stellar bright lines belong to these spectra. The inference seems scarcely warranted, however, for, on the one hand, the lines in the spectrum of hydrogen are so numerous that, wherever the star-lines lay, it would be easy to find lines near them, so that the accord would have to be very close for any such deduction to be safely based upon it ; and, on the other, the observations of the lines in the stellar spectra are less accurate than Mr. Sherman seems to think. The slight differences in the recorded positions of the bright lines as given by different stars are probably indications simply of a roughness in the readings, and the lines are most likely the same in general in the different spectra. The following may be taken as rough mean positions for the bright lines in these interesting spectra : 600 mm., 581, 568, 540, 466, together with the F line of hydrogen, and, in some cases, D_3 and the third line of hydrogen at 434, assuming that the lines are the same in the various spectra of the type. The close correspondence of the bright lines in R Geminorum to those observed by Cornu in Nova Cygni, 1876, indicates that we probably have there the coronal line 1474 K, the principal chromospheric lines, and the typical nebular line at about 500.

ASTRONOMICAL PHENOMENA FOR THE WEEK 1887 FEBRUARY 20-26

(For the reckoning of time the civil day, commencing at Greenwich mean midnight, counting the hours on to 24, is here employed.)

At Greenwich on February 20

Sun rises, 7h. 6m. ; souths, 12h. 13m. 56·7s. ; sets, 17h. 21m. ; decl. on meridian, 10° 55′ S. : Sidereal Time at Sunset, 3h. 22m.

Moon (New on February 22) rises, 5h. 52m. ; souths, 10h. 25m. ; sets, 15h. 2m. ; decl. on meridian, 17° 6′ S.

Planet	Rises h. m.	Souths h. m.	Sets h. m.	Decl. on meridian ° ′
Mercury ...	7 33 ...	12 58 ...	18 23 ...	7 34 S.
Venus	7 49 ...	13 27 ...	19 5 ...	4 59 S.
Mars	7 38 ...	13 9 ...	18 40 ...	6 23 S.
Jupiter... ...	23 16* ...	4 17 ...	9 18 ...	12 11 S.
Saturn... ...	12 59 ...	21 8 ...	5 17* ...	22 23 N.

* Indicates that the rising is that of the preceding evening and the setting that of the following morning.

Feb. 20 ...	h. 2 ...	Jupiter stationary.
22 ...	— ...	Annular eclipse of the Sun ; visible only in parts of South America, Australia, and the South Pacific Ocean.
24 ...	17 ..	Venus in conjunction with and 1° 17′ north of the Moon.

Variable Stars

Star	R.A. h. m.	Decl. ° ′		h. m.	
U Cephei	0 52·3 ...	81 16 N. ...	Feb. 20,	20 38	*m*
			,, 25,	20 17	*m*
Algol	3 0·8 ...	40 31 N. ...	,, 25,	6 5	*m*
W Virginis	13 20·2 ...	2 48 S. ...	,, 22,	23 0	*M*
δ Libræ	14 54·9 ...	8 4 S. ...	,, 24,	0 31	*m*
U Coronæ	15 13·6 ...	32 4 N. ...	,, 20,	23 19	*m*
S Libræ	15 14·9 ...	19 59 S. ...	,, 21,		*m*
U Ophiuchi... ...	17 10·8 ...	1 20 N. ...	,, 20,	3 27	*m*
		and at intervals of		20 8	
β Lyræ...	18 45·9 ...	33 14 N. ...	Feb. 24,	4 0	*m*
W Cygni	21 31·8 ...	44 52 N. ...	,, 24,		*m*
T Pegasi	22 3·4 ...	11 59 N. ...	,, 20,		*M*
δ Cephei	22 25·0 ...	57 50 N. ...	,, 23,	21 0	*m*

M signifies maximum ; *m* minimum.

Meteor-Showers

February 23-25, near β Trianguli, R.A. 30°, Decl. 35° N
Also from Monoceros, R.A. 120°, Decl. 5° S.

GEOGRAPHICAL NOTES

It would seem that Dr. Oscar Lenz is only to leave Zanzibar this week. The *Times* Vienna Correspondent is mistaken in thinking that the Royal Geographical Society expects Dr. Lenz to come direct to London. He must, of course, first render his account to the Vienna Society, which sent him out ; but after that, it is hoped, he will come to London and tell his story. It is possible that before leaving Zanzibar he may have an opportunity of giving Mr. Stanley the benefit of his experience. Mr. Joseph Thomson, in a letter to the *Times*, endeavours to show that Mr. Stanley is taking a too rosy view of the prospects of his expedition. Mr. Thomson naturally insists on the superiority of the Masai Land route over all others. Certainly Mr. Stanley exaggerated the difficulties of this route, and we are inclined to believe that, had it been selected, the expedition might have reached Emin Pasha sooner than by the Congo. It should be remembered that, even if all the vessels on the Middle and Upper Congo are available, they could not possibly convey a thousand people in one journey—a good authority assures us that there must be at least three journeys ; so that, unless Mr. Stanley starts on his land journey with only one-third of his caravan, instead of 35 days after leaving Stanley Pool it will take 100 days to reach the mouth of the Aruwimi. At the same time we must believe that Mr. Stanley knows what he is about, and is not likely to lay himself open to the reproach of being so far out in his calculations.

In the official report, just issued, on the administration of Lower Burmah during 1885-86, and Upper Burmah during 1886, there are some interesting passages relating to the resources of the new British province. Agricultural products, such as rice, wheat, maize, and other cereals, are grown in large quantities. The country is believed to be rich in mineral resources, and the subject is at present under the examination of the Geological Survey. Meanwhile it is known that the country to the north-east of Mandalay is the richest, if not the only, ruby-

producing tract yet discovered. As to gold and silver, nothing trustworthy is known. Jade and amber are found in parts. But the most valuable of the Upper Burmah minerals is likely to be coal, of which there are certainly four fields, one of which has already yielded excellent fuel.

DR. HOLUB, whose murder to the north of the Zambesi is doubtfully announced, may be remembered as the author of "Seven Years in South Africa," published about six years ago. He set out some three years ago to march from the Cape to Cairo, partly for purposes of exploration, and partly to open up markets in Central Africa for Austrian commerce. He does not seem to have made much speed.

PROF. MIGUEL MARAZTA has made what seems a curious anthropological discovery in the valley of Rebas (Gerona) at the end of the Eastern Pyrenees. There exists in this district a somewhat numerous group of people, who are called *Nanos* (dwarfs) by the other inhabitants, and as a matter of fact are not more than four feet in height (1·10 to 1·15 metres). Their bodies are fairly well built, hands and feet small, shoulders and hips broad, making them appear more robust than they really are. Their features are so peculiar that there is no mistaking them among others. All have red hair; the face is as broad as long, with high cheek-bones, strongly developed jaws, and flat nose. The eyes are not horizontal but somewhat oblique, like those of Tartars and Chinese. A few straggling weak hairs are found in place of beard. The skin is pale and flabby. Men and women are so much alike that the sex can only be told from the clothing. Though the mouth is large, the lips do not quite cover the large projecting incisors. The *Nanos*, who are the butt of the other inhabitants, live entirely by themselves in Rebas. They intermarry only among themselves, so that their peculiarities continue to be reproduced. Entirely without education, and without any chance of improving their condition, they lead the life of pariahs. They know their own names, but rarely remember those of their parents, can hardly tell where they live, and have no idea of numbers.

JOHN HUNTER

THE Hunterian Oration was delivered on Monday afternoon in the theatre of the Royal College of Surgeons by the President, Mr. Savory, F.R.S., Senior Surgeon to St. Bartholomew's Hospital. After a few introductory remarks, Mr. Savory proceeded to say that surgeons with one voice have proclaimed the supremacy of Hunter above all who have ever studied surgery. Students of science have acknowledged him to be among the chief of those who have in any age advanced human knowledge. He was, and is, beyond and above all surgeons, a philosopher in surgery. His idea of the subject of his thoughts was far more adequate than that of other men. He was supreme in the scope and method of his work. He understood much better than those around him how to engage in the interpretation of Nature; he knew best how to approach and to disclose truth. For he not only understood that the problems which lay immediately before him were, of all, the most complex and difficult to solve, but he could see also that they were not isolated but dependent ones. He saw in the necessary relation in which they stood to others the only means by which they could be worked out; and on this understanding he resolved to investigate the questions he desired to answer. Mr. Savory next spoke of the passion of Hunter for collecting. His museum included, he said, not only—to use the words of Professor Flower—"illustrations of life in all its aspects, in health and in disease; specimens of botany, zoology, palæontology, anatomy, physiology, and every branch of pathology; preparations made according to all the methods then known; stuffed birds, mammals, and reptiles, fossils, dried shells, corals, insects, and plants; bones and articulated skeletons; injected dried and varnished vascular preparations; dried preparations of hollow viscera, mercurial injections, dried and in spirit; vermilion injections; dissected preparations in spirit of both vegetable and animal structures, natural and morbid; undissected animals in spirit, showing external form or awaiting leisure for examination; calculi and various animal concretions; even a collection of microscopic objects, prepared by one of the earliest English histologists, W. Hewson; but it extended to minerals, coins, pictures, ancient coats of mail, weapons of various dates and nations, and other so-called 'articles of *vertu*.'" Hunter's labours in surgery were next referred to. He was ever searching for principles, but strove to reach them only through facts. Facts always first, but never facts only; from facts to principles. He understood that all progress mainly depends on the power of grouping and uniting for some new purpose facts that have been discovered independently and that are daily being revealed, yet with little or no reference to the principles they are found to support. He saw that surgery, in his time, was but a rude, empirical art, consisting of little else than a knowledge of many facts which stood in no visible relation to each other, and of many more opinions which, for the most part, had no relation, or but a very distant one, to any facts whatever. He held that surgery should be raised from a collection of such creeds to the rank of a science, but this could be only by founding its practice upon some principles. The discovery of some, at least, of these principles was Hunter's final aim. But those principles could not be reached by guessing. They could be approached only through the orderly investigation of facts. But then an explanation of these facts themselves could be only through the truths of physiology. The signs of disease could be understood only by him who had studied the laws of life and health. An intelligent interpretation of the one could be only in proportion to a previous knowledge of the other. But the problems of life, of health, are presented to us in man in their most complex form—in a form so difficult that even Hunter could not solve it. They must be reduced to simpler terms through a study of the lower forms of life. Thus, with the ultimate aim of relieving human suffering, Hunter studied the phenomena of motion in plants. Nay, he went further, to crystals and other forms of inorganic matter; and he says: "The better to understand animal matter, it is necessary to understand the properties of common matter, in order to see how far these properties are introduced into the vegetable and animal operations." The singleness of purpose with which Hunter worked is made evident, Mr. Savory continued, not only in the actual result of his labours, for no human being with divided interests could rival such achievements, but in the record, as we have it, of the life he led. He gave not only the whole of his time—yes, the whole of it in no mere conventional sense—and all his great powers, his mind and body alike, to the one object of his life; but to this he sacrificed all that he possessed, all that he could gain. To this he devoted, without stint or scruple, his money, his friendships, all his other interests. What any other man would have considered impossible, he made practicable. And this to no personal end. He was careless of all rewards save that which was to him paramount, the discovery of truth. A noteworthy point in the character of Hunter appears to be found in the relation which, in him, thought bore to action. He combined in himself in a singular degree the power of conception and of execution. He not only saw much further, but he was able to do much more than most others. He saw as Bacon saw—and the idea was probably as original with him as with Bacon—that the systematic and thorough examination of facts was the first thing to be done in science, "and that, till this had been done faithfully and impartially, with all the appliances and all the safeguards that experience and forethought could suggest, all generalisations, all anticipations from mere reasoning, must be adjourned and postponed; and further, that, sought on these conditions, knowledge, certain and fruitful, beyond all that man then imagined, could be obtained." But he went immeasurably further than the great prophet of science in putting his conceptions to the proof in imperishable work on the lines he had laid down. "I only sound the clarion," said Bacon, proudly, "but I enter not into the battle." Hunter sounded a clarion the echoes of which are reverberating still, but he entered into the battle also, and was always found where the blows fell thickest, and we are in possession of the spoils. In his museum there is, at once, the clearest evidence of the idea and the richest fruits of execution. In speaking of Hunter's general education, Mr. Savory proceeded to say that if Hunter had received a good general education in early years he would have been all the better for it. He would have lost nothing. His mental powers could have been in no way impaired; on the contrary, enhanced. He would have recorded the results of his labours in better order, with more light and greater effect, and we should have had the advantage of a clearer revelation of his thoughts. But all this is very far from saying that Hunter was not, in the strictest sense, an educated man. He was not, indeed, a scholar. If the subtle rendering of a Greek poet, or the skilful turning of a Latin verse be the sole test of culture, he gave no sign of it. Of ancient lore he was sadly destitute. In *Literis Humanioribus* he could have