the movement; a temporary committee was formed, and lists of subscribers and donors were at once commenced.

By a curious coincidence, the telegram announcing the formation of the Society no sooner came under the notice of the Colonial Government, than they informed the committee that they had, a short time before, received a communication from the Imperial authorities on the subject. The Astronomer Royal had intimated his desire to form a station in New Zealand for the observation of the Transit of Venus in 1874, and had recommended Canterbury as suitable for the purpose. This announcement was naturally most encouraging to the committee; steps were immediately taken by them to communicate, through His Excellency the Governor, with the Imperial Government. The Governor and his advisers have informed the Society that they cordially approve of its object, and will assist it as far as possible.

The Provincial Council of Canterbury was in session a few days later. Petitions were presented to it by the Society, praying for a grant of 1,000*l.* towards buildings, &c., and 5,000 acres of the waste lands of the province as an endowment towards the permanent maintenance of the Observatory. The Council, by a majority of twenty-five to eleven, voted the sum of 1,000*l.*, and 200*l.* for a site; but they declined at present to grant the endowment in land. The money grant of 1,200*l.* was likewise made conditional on the agreement of the Colonial Government to undertake the maintenance of the Institution. The great interest taken in the movement by His Excellency the Governor and his Ministers leads the Society to hope that a satisfactory arrangement may be made, so that before this time next year we may be placed in a position actually to commence operations.

Although only a month has elapsed since the first meeting, the Society has been warmly supported in this province. Additional subscriptions are received every day, and since January 22, when the temporary committee presented their report, the number of annual members has been increased to nearly 200.

I enclose the report of the temporary committee, which details the work actually done by them so far. You will see that the committee have attempted to commence the practical work of founding the Society by asking the Astronomer Royal to send out a gentleman to advise as to a proper site and other initiatory work. It is our hope that our object may receive a cordial concurrence from scientific men at home. We desire to co-operate with similar institutions in the old world by performing work which may not only be of practical use to our community here, but may, if possible, add something, however small, to the results of labours of older workers in the field of science. We trust that even one of England's youngest daughters may be of some assistance in this respect to her more favoured sisters.

W. M. MASKELL, Hon. Sec.
Observatory Society of Canterbury.

A NEW MODE OF TAKING CASTS

MR. BOYD DAWKINS, F.R.S., has recently exhibited to the Manchester Philosophical Society a number of casts in plaster of Paris of various objects of natural history, and explained the process by which any one can make them for himself. The material of the mould is artists' modelling wax, which is a composition akin to that which is used by dentists. And as it becomes soft and plastic by the application of heat, though in a cold state it is perfectly rigid, it may be applied to the most delicate object without injury. As it takes the most minute markings and striations of the original to which it is applied, the microscopic structure of the surface of the original is faithfully reproduced in the cast. The method is briefly this:—1. Cover the object to be cast with a thin powder

of steatite or French chalk, which prevents the adhesion of the wax. 2. After the wax has become soft either from immersion in warm water or from exposure to the direct heat of the fire, apply it to the original, being careful to press it into the little cavities. Then carefully cut off the edges of the wax all round, if the under cutting of the object necessitates the mould being in two or more pieces, and let the wax cool with the object in it, until it be sufficiently hard to bear the repetition of the operation on the uncovered portion of the object. The steatite prevents the one piece of the mould sticking to the other. The original ought to be taken out of the mould before the latter becomes perfectly cold and rigid, as in that case it is very difficult to extract. 3. Then pour in plaster of Paris, after having wetted the moulds to prevent bubbles of air lurking in the small interstices, and if the mould be in two pieces, it is generally convenient to fill them with plaster separately before putting them together. 4. Then dry the plaster casts either wholly or partially. 5. Paint the casts in water colours, which must be *fainter* than those of the original, because the next process adds to their intensity. The delicate shades of colour in the original will be marked in the cast by the different quantity of the same colour which is taken up by the different textures of the cast. 6. After drying the cast, steep it in hard paraffin. The ordinary paraffin candles, which can be obtained from any grocer, will serve the purpose. 7. Cool, and polish the cast by hand with steatite. The result of this process is far better than that obtained by any other. The whole operation is very simple, and promises to afford a means of comparison of natural history specimens in different countries, which has long been felt to be a scientific need. It has been already introduced into America and India by Mr. Dawkins, and samples of the casts are to be seen in the British Museum, as well as in that of the Geological Survey, and of Oxford, and of the Queen's College. Casts of type specimens may be multiplied to any extent at a small cost of time and money, and are as good as the original for purposes of comparison, and almost as hard as any fossil.

The modelling wax can be purchased from Messrs. Lechertier, Barbe, & Co., artists'-colourmen, Regent Street.

THE NEBULA ROUND η ARGUS

A PAPER, accompanied by five drawings, has recently been read to the Royal Society of Victoria by Mr. McGeorge, on the star η Argus and the great nebula near it, from which we select a few statements which appear to establish the occurrence of sensible changes in that region of the sky. After noticing the value of Sir John Herschel's drawing and description of the nebula, Mr. McGeorge remarks that from 1838 to 1869 no trustworthy observations of the nebula could be made, for want of instruments of sufficient power; though Mr. Tebbutt and others have contributed valuable information about η itself. A single glance is sufficient to show the complete inapplicability of Herschel's drawing or description to the present appearance of the nebula in the Great Melbourne Telescope. This, however, might be attributed to the great power of the instrument, whose light exceeds that of the 20-ft. reflector as much as that surpassed the other telescopes with which the nebula has been observed.

But the changes indicated in the present paper cannot be so explained, for they have nearly all been traced in the *Great Melbourne Telescope itself*, and are described in detail, with reference to drawings and observing notes. A few may be mentioned here.

η , which Herschel saw involved in dense nebula, was in April 1869 seen on the bare sky, the nebula having disappeared for some distance around it. Drawing No. 1, which accompanied the paper and which is here reproduced,

then made, shows that the southern loop of Herschel's Lemniscate had bulged out into the vacuity, forming an isthmus which trended north and joined the northern loop. The *second* drawing, January 1870, shows that within six months this isthmus had detached itself from the north side of the Lemniscate, through 90° , to form a broader peninsula. The third drawing, April 1870, shows the outline of a gulf or cleft, commencing at H 634. This

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star is one of the "landmarks" described in 1838 as being "near the margin of the Lemniscate." It is now in mid-channel. These three drawings were made by Mr. Le Seur. No. 4 was made by Mr. McGeorge at the close of December in the same year. It confirms the existence of the Gulf; another of the "landmarks," H 616, is now nearly clear of nebula. A promontory shown in No. 2 has detached itself to form an island of nebula with a starry nucleus. This and the neighbouring outline of the Lemniscate have the same hard definite outline given by

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Herschel; at one part, however, the outline seems encroaching upon the Lemniscate, and leaving an oval patch of thinner nebula; southward the outline seems to be curdling and breaking up. A fifth drawing, which is also here given, was made in June 1871, which amongst other changes shows that the island has shifted; the nucleus is now detached from it, and proves to be a triple star.

Mr. McGeorge finds, as Lord Rosse did, that high powers on a good night bring out details of nebula in-

visible with lower powers. On one occasion he speaks of using 1,300, whose definition, he says, "was magnificent for an hour." He notices a sort of stereoscopic effect which, particularly with the high powers, makes the Lemniscate look "like a huge snowy cave with uneven woolly sides."

In December 1869 the spectrum of η Argûs showed bright lines; but in January 1871 there was no trace of them; but Mr. McGeorge thought that with a wide slit he detected absorption bands in the position of the usual nebular lines. Distinct nebulosity was then visible round the star, most condensed near it, chiefly in the direction of the Lemniscate.

It is perhaps unnecessary to remark that Mr. McGeorge has seen nothing in the way of coloured stars at all to be likened to κ Crucis; one or two are reddish.

It is the intention of the Melbourne astronomers to pursue unremittingly the study of this nebula, which seems already to have given them such remarkable results. But it is evidently a most laborious task which they have imposed on themselves. At present they are confining their attention to the vicinity of the Lemniscate, but even there the field of labour is immense, for already they have noticed three times as many stars as were seen by Herschel.

They have with them the best wishes and sympathy of all astronomers.
T. R. ROBINSON
Armagh, April 21

BRITTANY DOLMENS AND LINES

MR. JAMES FERGUSON, in his interesting volume on "Rude Stone Monuments in all Countries,"* which will doubtless become a text-book on that section of archaeology which pertains to Megalithic structures, has made one or two unintentional misstatements, discrepancies, or errata, which perhaps he will allow me to correct through your columns, in hopes that they may be in time for the second edition, which is probably called for, if not accomplished. I will state them as briefly as possible.

1. Carnac (p. 349): "No stone in the neighbourhood of Carnac is hewn or even fashioned beyond splitting, and no sculptures of any class have been traced" (italics are mine). Will Mr. Fergusson forgive me if I point out that the tumulus of Kercado, situate in the grounds of the Chateau of the same name, and marked in the map of the neighbourhood of Carnac given in his volume Fig. 135 as "Kercadio Tums. 2" has well marked sculpture on at least three of its stones, one of the figures, viz. that on the under-surface of the capstone, being evidently of the same type as the *Hatchet* (?) in the roof of Dol-au-Marchand or Table de César, see Fig. 149 (where by-the-by I never could make out the so-called plume), and is identical with one in Bé-er-groah (Locmariaker). This tumulus, or dolmen-mound, as I prefer to call it, is much nearer to the lines of Kermario and Kerlescant than Mont S. Michel is to the lines of Menec. I should add that M. René Galles figures two of the sculptured stones, but not the hatchet.

But this is not the sole example of sculptured stones in the neighbourhood of the Carnac amorpholiths. In the curiously arranged dolmens called the "Grottes de Kerozille," are distinct traces of former sculpture (in which, if I mistake not, some traces of some coloured pigment have been discovered by W. Lukis), of which M. Galles gives but imperfect representations. Doubtless all the stones were covered with similar ornamentation, which has disappeared from the weathering of the stone surface. The "Grottes de Kerozille" are situate to the north of Menec, about two miles distance, marked Dols. 11 and 12 in MM. Blair and Ronald's map as given by Fergusson. There are in reality three dolmens, the centre one at right

*Vide NATURE, Vol. v. p. 386.