

Star Seen Changing to Nebula

Astronomy

A star that exploded, and is now changing to a nebula, in reverse of the usual process of stellar evolution, is the rare spectacle being observed at the branch station of the Harvard College Observatory at Bloemfontein, South Africa. This unconventional behavior of nova Pictoris, as the star is called, was discovered by Dr. J. S. Paraskevopoulos, who is in charge of the branch station, Dr. Harlow Shapley, director of the observatory, recently announced. Confirmation of the discovery has just been received from the Argentine National Observatory at LaPlata.

Until the spring of 1925 this star was too faint to be seen with the unaided eye. Then it suddenly flared up as a nova, or "new star," and was discovered by R. Watson, a South African amateur astronomer. The star is in the constellation Pictor, the painter, a group not visible from northern latitudes.

"The evolution of stars," Dr. Shapley explained, "is generally thought to be in the direction from nebula to star, but in this instance, and in two or three others, the transformation is in the opposite direction, and, astronomically speaking, is very rapid. All of these reversed cases are associated with the so-called novae, or new stars.

"Examination of earlier plates in the great collection at the Harvard Observatory, in Cambridge, where

the southern photographs are stored, showed that before its outburst, it had been of the twelfth magnitude, and astronomers believe that it will gradually return to that same degree of faintness.

"Dr. Paraskevopoulos' discovery was based on photographs of the star, made under various conditions, with the rapid photographic telescopes which he has recently transferred from the former Harvard station in Peru to the new site in South Africa. A ring or shell of nebulous matter appeared around the outer edge of the image of the star, and has gradually grown larger and more distinct. The phenomenon clearly indicates that the outburst of the nova, and its rapid increase three years ago to ten thousand times its former brightness, was actually an explosion of the star, which blew its outer parts away from the nucleus.

"The ring of nebulosity now observed is the former outer portion receding with a velocity of several hundred miles a second. Future observations will show whether the explosive transformation will result in one of the permanent and typical 'planetary' nebulae of which a hundred or so are known among the stars, or whether the receding atmosphere will gradually dissipate into space, leaving the nucleus as a typical star.

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Antarctic Ice Would Bury Earth

Geography

Antarctica, whose desolate ice fields will soon re-echo the roar of Commander Byrd's motors, has enough ice to cover the whole earth to a depth of 120 or 130 feet, and has been gathering this solidified cold for a quarter of a million years or more.

This is the opinion of Prof. W. Meinardus of the University of Göttingen, who has been engaged lately in an endeavor to estimate the bulk of the ice that covers the south polar continent. He is of the opinion that only a small part of the elevations of from 6,000 to 10,000 feet reported for the surface of the antarctic plateau can be made up of solid land. Most of the mass, he thinks, consists of accumulated ice, piled on a foundation of rock not more than about 2,000 feet in mean elevation. Professor Meinardus derives this estimated land height of Antarctica from an average of the mean elevations of the nearest

continents, South America, Africa and Australia. All above that is ice.

Multiplying the estimated average thickness of this massive sheet by the area of Antarctica, the German scientist obtains a total of twenty-six quadrillion (26,000,000,000,000,000) cubic yards of ice, weighing about twenty quadrillion tons. There is enough ice there, he says, to cover all Europe to a depth of over 6,500 feet, or to blanket the whole earth under a layer between 120 and 130 feet thick. Melted down, it would raise the world's general ocean level 100 feet.

From the slowness of glacial movements in the antarctic region, Professor Meinardus has come to the conclusion that at least part of the southern ice mass has been there since Pleistocene geological times. This is variously estimated at from 250,000 to 400,000 years ago.

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NATURE RAMBLINGS

BY FRANK THONE

Natural History



Euphorbias

The plants of the Euphorbia family are among the most interesting in the whole vegetable kingdom, and some of them are also among the most important. They are found in all parts of the world, though they favor the drier tropics, and some of them have found wide favor as cultivated ornamentals. The most familiar examples, perhaps, are the poinsettia and the variegated-leaved plant known as snow-upon-the-mountain.

Another favorite for indoor culture is the one known as Glastonbury thorn, technically *Euphorbia splendens*. It has a square, succulent, thorn-armed stem, more or less like a cactus, and it bears crops of oddly-shaped but very beautiful little coral-colored flowers. Tradition has it that after he had buried the crucified Christ in his own tomb, Joseph of Arimathea left Palestine and finally wandered to England. At Glastonbury, which really is one of the oldest of Christian shrines in the kingdom, he thrust his dry staff into the ground, and it took root and bore flowers at Christmastide. At any rate, this desert plant, which is usually almost as leafless as a cactus, really will bear abundant flowers in the winter if well cared for, so that it is also sometimes called Christmas thorn.

Two other members of the family, though not of the genus *Euphorbia*, are of very considerable economic importance. The first is the castor bean, that Tree of Evil for medicine-hating small boys. During the War castor oil found another important use, for it was the best lubricant known at that time for airplane motors. The second euphorbiaceous tree is even more important, both in peace and war, for it is the famous *Hevea brasiliensis*, the Para rubber tree.

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