

or five feet high, and its coils are 1,254 feet long. The open jaws are 61 and 56 feet respectively in length, and in their 75-foot gap lies an oval mound of earth like a big egg about to be swallowed. The egg was probably an altar, for on it the Indians left burnt stones.

Mound building Indians of the mid-west built a good many effigies resembling men, birds and beasts. But the Great Serpent is a prehistoric masterpiece.

Ever since 1886, when Harvard University's president was dismayed to find a cornfield waving among the Serpent's coils, the earthen monument has been protected, restored. The Ohio State Archaeological and Historical Society has owned the land since 1900.

*Science News Letter, October 1, 1938*

#### PUBLIC HEALTH

### Thousands Amid Food Plenty Suffer From Malnutrition

**T**HERE ARE thousands of Americans who live in a land of food plenty and yet suffer from hunger. This is not a story about economics and how badly we distribute our agricultural products. It is a story of hidden hunger, the diseases of malnutrition. It is an ABC story because it is about vitamins.

The best estimates or guesses as to the prevalence of nutrition diseases can not be backed up by figures because, except for pellagra in some southern states, the deficiency diseases are not reportable. Yet people die of them.

Prize medical story in this regard comes from one of the largest of New England cities. A woman was found dead at the bottom of a staircase in a not-too-well-off residence. She was covered with what appeared to be livid bruises. Naturally the husband was taken into custody by the police. He might have been tried for murder, except that a keen-eyed coroner-physician, performing the autopsy, rendered a verdict that set him free. The woman had died of acute scurvy, the symptoms of which made her appear to have been badly beaten. Scurvy is caused by a lack of vitamin C contained typically in citrus fruits.

Lack of vitamin A causes a form of night blindness, sometimes involved in auto accidents. This vitamin is contained in butter. When during the World War, no butter was available and skim milk was used widely in some Scandinavia areas because butter could be sold at such high prices, eyes of some children were permanently injured.

Rickets is widely found in rich and poor children alike, despite all the cod-liver oil and vitamin D extracts sold and administered.

All the pellagrins, those who do not get the P-P factor that prevents pellagra, are not in the southern states. It is found in northern areas and large cities

where lack of money, alcoholism, or idiosyncrasies of diet prevent eating proper protective food.

Beri-beri is occasionally found in America. Its cause, which is lack of vitamin B one, is also blamed for neuritis frequently associated with other diseases in this country.

*Science News Letter, October 1, 1938*

#### ASTRONOMY

## New Exploding Star Theory Traces Evolution of Growth

### Stars Grow Old by Getting Hotter and Brighter Then Contracting; At Turning Point They May Flare

**A** NEW theory of evolution for "exploding" stars called novae by astronomers, is suggested by Prof. George Gamow, of George Washington University (*Physical Review*, Sept. 15).

Stars grow old, Prof. Gamow's hypothesis suggests, by gradually burning up their hydrogen and getting hotter and brighter. A source of nuclear energy within the star causes this first stage.

Next point in the star's evolution is a progressive contraction in which the star's radiation comes from gravitational energy only. However, at the turning point between hydrogen-burning and the gravitation contraction, the star's mass must redistribute itself.

During this redistribution of mass, gravitational energy is liberated which shows up, suggests Prof. Gamow, as a short-time additional brightness. It is this brightness, he adds, which may well be the cause of the bright flare-up of the so-called "nova" stars.

What happens to the star, after contraction sets in, depends on its mass when the contraction starts. For small stars less than 3.2 times as large as the sun the contraction leads to the well-known type known as the white dwarfs which have "a degenerated electron gas inside and very small energy production."

For the larger stars, however, the contraction creates a central neutron core inside the star which represents "a practically unlimited source of energy." The growth of such a neutron core will bring about an increase in the amount of energy liberated and probably makes the star's atmosphere expand. In this state it may enter the star class known as the giants.

Finally the explosion of such giant

stars will lead to extremely bright novae which might be identified as the supernovae; a class suggested by Prof. Fritz Zwicky of the California Institute of Technology and Dr. Walter Baade of Mt. Wilson Observatory.

Astronomers could check the new hypothesis, Prof. Gamow suggests, by seeing if the spectrum of the star known as Nova Corona belongs to the M giant class of stars.

*Science News Letter, October 1, 1938*



#### FOR FUTURE EYES

*This lady's hat in the mode of 1938 is designed to excite comment fifty centuries from now when the time capsule is excavated by archaeologists of that day. It is one of a number of articles in common use included in this "cross-section of civilization" which also contained more than 10,000,000 words and a thousand pictures on microfilm.*