

ASTRONOMY

Discovers an "Archipelago Of Island Universes"

VISION of "stars innumerable as seashore grains of sand," in a tremendous archipelago of "island universes," was flashed before the meeting of the American Astronomical Society at Connecticut College, New London. Dr. E. F. Carpenter, director of the Stewart Observatory of the University of Arizona, at Tucson, reported the discovery of a vast super-galaxy, a galaxy of galaxies, in the constellation of Hercules, near the boundary of the star-group known as the Northern Crown.

The magnitude of the newly-described super-galaxy may be grasped by first looking at our own. All the individually visible stars in the sky, and the vast host of other stars so remote that their swarming numbers merely blend as the hazy light of the Milky Way, constitute one galaxy—our "home" galaxy, of which the sun with its family of planets is an inconspicuous member.

Dr. Carpenter's "galactic archipelago" is made up of at least 250 units, each a vast galaxy like our own. Some of these are as much as ten thousand light-years in diameter. Although these galactic units are "closely packed" into their cluster, as astronomic packing goes, still there is an average of about one-sixth of a million light-years between neighboring "island universes." The whole archipelago is perhaps 1,500,000 light-years in diameter.

50,000,000 Light Years Away

A survey of the apparent brightness of the nebulae indicates that on an average each galaxy sends to earth only 1/25,000 as much light as the faintest star visible to the naked eye. Since each galaxy consists of many thousands of stars, some of them flaming giants, this very low apparent brightness means that the new-found super-galaxy is very far away. Dr. Carpenter estimates its distance at 50,000,000 light-years—fifty million times as far as light, speeding at 186,000 miles a second, can travel in a year.

Dr. Carpenter discovered the nature of the super-galaxy on a photograph taken with the thirty-six inch reflecting telescope at the Stewart Observatory.

He examined older plates taken of the same region at other observatories, and found the cluster as an undefined faint object on two of them. But the details of structure did not show up. He is of the opinion that when the cluster is re-photographed with a still bigger telescope, like the hundred-inch instrument at Mount Wilson, the number of island universes in his archipelago will be increased, possibly to 300 or more.

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PHARMACOLOGY

New Weight-Reducing Drug Should Be on Poison List

DINITROPHENOL, potent new weight-reducing drug, should be added to the poison list and its sale regulated so that it can be obtained only on a physician's prescription.

This step was urged as a safety measure by Drs. M. L. Tainter, W. C. Cutting and A. B. Stockton at the meeting of the American Public Health Association. These Stanford University scientists were the first to report the use of the drug as an obesity remedy.

"Probably at least one hundred thousand persons have been treated with the drug in this country alone," Dr. Tainter declared in reviewing the results obtained with the remedy since he and his colleagues first studied its possibilities in 1931. It has also been used in Canada, Great Britain, France, Sweden, Italy and Australia.

Three deaths have been reported from its use. One was in a psychiatric patient and there is some doubt in Dr. Tainter's mind as to whether the drug was the cause of this death. The other two were a physician who took two tremendous doses and a girl who bought the drug on her own responsibility from a druggist and took a very excessive dose. Excessive amounts of the drug cause death by producing a fatally high fever.

A possible means of treating this dangerous fever was suggested by Dr. Tainter who said that in animals, at least, the fatalities from the fever of dinitrophenol can be prevented by chill-

ing the skin with ice packs and by giving oxygen inhalations.

The main disadvantage to the medical use of the drug is the very alarming and unpleasant skin rash which it sometimes produces. A saving feature is that about half the patients who have had one such skin reaction are able, after a short interval, to continue the treatment without further difficulty.

Dr. Tainter and colleagues were unable to find that the drug, in proper dosage, had any harmful effect on liver, kidneys, blood, digestive tract or blood pressure or circulation. Patients with high blood pressure can be treated like other patients, and as they lose weight the blood pressure is usually lowered and the accompanying symptoms of that condition improved. There is always a possibility that some persons may have an idiosyncrasy for the drug and in these patients harmful effects might be produced by even the correct doses.

Because it is such a potent remedy Dr. Tainter urged not only that its use be limited to physicians but that even doctors should not use it until every other remedy for reducing weight, including careful dieting, had been tried.

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PSYCHOLOGY

Blood Vessels Aid In Feeling Temperature

YOU FEEL a flatiron as hot or a piece of ice as cold not because of the action of a special temperature mechanism in the skin but through the action of your blood vessels. The heat dilates or enlarges your blood vessels, while cold, on the other hand, contracts them. This theory, opposed to the commonly held one of a special skin mechanism for feeling temperature, was proposed to the American Psychological Association meeting in New York City by Dr. John P. Nafe of Washington University, St. Louis, Mo.

The cornea of the eye, which contains no blood vessels, cannot feel temperatures, Dr. Nafe reported. The fact that warmth is perceived gently as a gradual flowing in, while cold seems sharp and quick, also points to the origin of the sensation in the blood vessels, he believes. When you place your left hand in cold water, the blood vessels in your right hand also contract and within three seconds your right hand becomes more sensitive to heat and less sensitive to cold, Dr. Nafe has found.

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