

Ghul," which means "the head of the demon." Why they gave it such a name is something of a puzzle, because most of the Arabic star names, many of which we still use in slightly modified form, are more complimentary.

However, they might well have called it a demon if they had recognized what astronomers have learned about it, for this star, which we call "Algol," is one of the most famous of all variables, stars that change regularly in brightness, and it might easily bring to mind the blinking eye of some baleful creature as it goes through its cycle. Aside from the name, there is no indication that Arabs noticed this variability, but it has been suggested that they did.

The small map shows how to find Algol at this time of year.

Perseus, in which Algol is found, is just west of Capella. In shape it resembles two great fish-hooks, one of which, Perseus' foot, is immediately north of the Pleiades. Algol is near this hook. Ordinarily Algol is of the second magnitude in brilliance, a little brighter than the pole star, to the north. But late on the evening of Feb. fifth, and earlier on the eighth, eleventh and fourteenth, it will appear only about a third as bright.

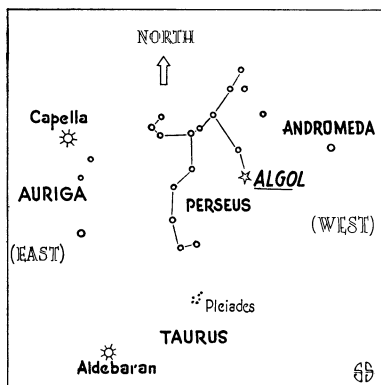
Reason for this variation is that Algol

really is two stars, revolving around the common center of gravity. Many such "binary" systems are known in the sky, but two features make Algol notable. First, the plane in which they revolve is almost in line with the earth; second, one of the stars is bright, the other very much darker. This means that on every revolution, which takes 2 days, 20 hours, 49 minutes to complete, the dark one comes in front of the bright star, and there is a partial eclipse. From the time the dark body starts coming in front of the other until the eclipse is greatest takes about five hours, then five hours more and Algol shines with its full vigor.

No telescope is powerful enough to show the separate stars in the system, but their presence is revealed by analyses of the light made with the spectroscope. The lines that are formed in this spectrum swing back and forth regularly in the same period in which the light changes. This proves that the brighter star is alternately approaching, then receding, as its dance goes on, and that there must be another star there, even though we cannot see it, to be its partner and hold it by gravitational pull.

Celestial Time Table for February

Sunday, Feb. 2, 9:00 p.m., Moon farthest —251,300 miles away. **Monday, Feb. 3,** 1:59 p.m., Moon passes Jupiter; 4:28 p.m., Moon passes Saturn. **Tuesday, Feb. 4,** 6:42 a.m., Moon in first quarter. **Thursday, Feb. 6,** 2:22 a.m., Algol at minimum. **Saturday, Feb. 8,** 11:11 p.m., Algol at minimum. **Monday, Feb. 10,** 7:00 p.m., Mercury farthest east of sun, visible low in west after sunset. **Tuesday, Feb. 11,** 7:26 p.m., Full moon; 8:01 p.m., Algol at minimum. **Friday, Feb. 14,** 3:00 p.m., Moon nearest, 227,000 miles away; 4:50 p.m., Algol at minimum. **Tuesday, Feb. 18,** 1:07 p.m., Moon in last quarter. **Thursday, Feb. 20,** 2:00 p.m., Jupiter passes Saturn; 9:52 p.m., Moon passes Mars. **Monday, Feb. 24,** 9:15 p.m., Moon passes Venus. **Tuesday, Feb. 25,** 10:02 p.m., New moon. Eastern Standard Time throughout.



HOLD OVERHEAD

Science News Letter, January 25, 1941

PSYCHOLOGY

Find Individual Differences Even Among Paramecia

DESPITE the present tendency toward regimentation, individual differences do exist even among the paramecia, those little microscopic creatures that dart about in pond water.

They differ in ability to "taste," or at least in what would more accurately be called chemical sensitivity. Some can take more salt on their food than others, and are likely to persist in this over a period of time. This was discovered by Dr. John W. French, Princeton psychologist, when he watched the behavior of paramecia from the same colony when dinner was served. His results are reported in the *Journal of Comparative Psychology*. (December, 1940)

The little water creatures also differ in what might almost be called "social habits," Dr. French found. When bacterial food was placed with a dropper in the exact center of their miniature laboratory pond, practically all the paramecia swam into the food area and once there refused to leave. Within a few minutes only a few stragglers remained away from the feast. Then, in a short time, the animals within the food area formed many groups, motionless and in contact with one another. Others, "solitary drinkers," swam about outside any group.

By an ingenious method, Dr. French "counted" those within the groups and also the free-swimming animals. When an electric cathode was dipped in, it attracted almost all the free swimmers. These were removed with a dropper and placed in one dish. The grouped animals were then put in a separate dish. Repetitions of the experiment showed that more of the previously grouped animals again formed into groups than in the case of those who had previously remained free.

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Next Dr. French tried salting the food. Some animals were attracted to the salty food, but others avoided it. By putting his dropper into the exact center of the food area, Dr. French was able to separate the salt eaters from the others. He put them into separate dishes, and repeated the experiment. More were attracted to salty food in the dish of previ-

ous salt eaters than in the dish of those who had a record of abstaining.

In this way, the paramecia demonstrated their consistent individual differences in sensitivity not only to salt, but also to potassium iodide and potassium chloride. Differences were almost entirely absent in "taste" for caustic soda, however.

Science News Letter, January 25, 1941

AGRICULTURE

Race Dogmas Challenged In Wallace's Report

In Final Annual Report as Secretary of Agriculture, Declares Western Hemisphere Has No Room for Such Ideas

"THERE is no room in the Western Hemisphere for any notions about racial superiority."

This counter-challenge is thrown into the faces of "New Order" race dogmatists by Henry A. Wallace, now just become Vice-President of the United States, in the midst of the biological and economic discussions that occupy his last annual report as Secretary of Agriculture. Speaking with the authority of his first-hand knowledge of genetics, which had gained him repute as a scientist before he ever entered public life, he lashes unsparingly at doctrines that would rearrange the world on a master-and-slave status:

"Theories of racial superiority and racial inferiority have no scientific basis. Certain nations may be very different by training from other nations; by inheritance they are probably little different.

"Millions living in Germany are different from us chiefly because of an indoctrination systematically instilled into them from early youth. They have had more training in hard work, in giving their all to the fatherland, and in sub-

mission to economic and military rule. Many of them believe war is holy and think the achievement of German domination justifies any means. But if numerous American children had been adopted into German families 20 years ago, they would be just the same. They would be indistinguishable from native-born Germans.

"Probably any favorably located race can develop a civilization. The Indians of Latin America did so. Civilizations of long ago in Africa, China, Japan, and India were not inferior in many respects to those of today. In this hemisphere, broadly speaking, we have democratic types of civilization, and they rest on a genetic basis."

In the report, much emphasis is placed on the necessity for adjusting American agricultural production to the existing market. Pre-war measures taken by practically all the nations anticipating the outbreak of hostilities had sharply diminished our old export markets, especially for wheat, cotton and tobacco, and the events of the war have cut still further into possible outlets for those crops. On the other hand, home markets for such things as meats, dairy products, fruits and vegetables are steadily improving.

In the presence of this situation, Mr. Wallace points out, "Growing unneeded crops is sheer waste of labor, of capital, and of soil, even if temporarily the products can go into storage under Government loans. It is a drain on resources that would otherwise be available for national defense."

Better trade relations with other Western Hemisphere nations are recommended in the report. Obviously, the

RADIO

J. J. McEntee, director of the Civilian Conservation Corps, will discuss the CCC's health and safety programs as guest scientist on "Adventures in Science" with Watson Davis, director of Science Service, over the coast to coast network of the Columbia Broadcasting System, Thursday, Jan. 30, 3:45 p.m. EST, 2:45 CST, 1:45 MST, 12:45 PST. Listen in on your local station. Listen in each Thursday.

United States cannot import from South America commodities of which it already has surpluses, like Argentine wheat or Brazilian cotton; for these, joint effort in seeking sales outlets would seem to promise more satisfactory results. In the meantime, there is plenty of room in United States markets for a whole array of products whose very names suggest the exotic: abaca, cinchona, kapok, rotenone, tea, cocoa, camphor, rubber, tropical hardwoods. Most of the North American demand for these things is now supplied from the Old-World tropics; and even so that demand should be capable of considerable further growth.

Science News Letter, January 25, 1941

BIOLOGY

Sex of 'Possums Modified With Hormones After Birth

MODIFYING sex in animals after they were born is the scientific feat reported by Prof. Carl R. Moore of the University of Chicago in the new issue of *Physiological Zoology* (January).

Opossums were the animals used in the experiments. They were the only readily available animals adapted to the methods used, because opossums are born in an "unfinished" condition and are immediately placed in the mother's brood pouch, where they remain for 60 or 70 days, completing their development. The only other animals that do this kind of thing live in the Australasian region; with the opossums, they constitute the great primitive mammalian group known as marsupials.

Opossum young, Prof. Moore discovered, are as "unfinished" sexually as they are in other ways when they are born. Rudiments of sex glands are there, but they do not show definite signs of becoming either male or female until the third day after birth. Accessory and secondary sex organs and tissues show differentiation even later.

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