



Do you know all the stars that can be located through that helpful landmark, the familiar Great Dipper? Follow the pointers to Polaris, the navigator's friend. Follow the handle to bright Arcturus.

The outstanding problem concerning Mercury today is whether or not it has an atmosphere. Theoretically, it cannot possess one. For every planet there is a certain "velocity of escape," a speed at which an object thrown upwards will leave the planet entirely. For the earth this is about seven miles a second, and this applies not only to objects like stones or bullets, but also to molecules, such as those forming the gases of our atmosphere. These molecules are in rapid motion, but they seldom attain this velocity, otherwise they would fly off into space and the earth would lose its air.

Mercury's Mass Less

But the mass of Mercury is about a twenty-fifth that of earth, its gravitational pull is less, and there the velocity of escape is only 2.2 miles per second. Because Mercury is close to the sun, its temperature is much higher than ours, and this would make the molecules move faster. Consequently, it is argued, they would often move fast enough to leave the planet's attraction, and therefore Mercury must have lost its original atmosphere ages ago.

However, there is observational evidence to the contrary. Dr. E. M. Antoniadi, a famous planetary observer connected with the Paris Observatory, has reported seeing clouds on Mercury. An English amateur, H. McEwen, director of the Mercury and Venus Section of the British Astronomical Association, claims to have confirmed the Frenchman's conclusions. And if there are clouds, there must be some atmosphere to hold them.

In just a year, it may be possible to test the accuracy of these data. At rather rare intervals, Mercury passes directly

between the sun and earth, when it can be seen as a dark spot on the solar surface, when it is examined with a telescope equipped with proper protection for the eyes. Usually, when the planet is on the side of the sun towards the earth, it is either above or below the solar disk.

Next May such a transit will occur, but it will be of a very peculiar kind, one that happens only once in nearly a thousand years. In England and northern Europe, the planet will miss the sun's disk, but by such a narrow margin that in southeastern Europe and Africa it will skim along the edge, remaining there for about forty minutes. This will give time for rather detailed examination, to find whether the telescope shows a halo of light around the half of the planet's disk that is not in front of the sun.

If there is an atmosphere, such a halo should be seen. The layer of air would bend the sun's rays around as at twilight on the earth, so that the complete circle of the planet would be visible. If there were no atmosphere, however, only the part of the planet that is actually in front of the sun should appear.

During May, the moon will be visible in the evening from the beginning of the month to about the ninth, and from about May 23 to 30. Its phases are: Full moon, May 6 at 10:01 a.m., Eastern Standard Time; last quarter, May 14, at 1:12 a.m.; new moon, May 20, at 3:34 p.m., and first quarter, May 27, at 9:46 p.m. The moon is farthest from earth on May 3 at 7:00 a.m. (distance 252,300 miles), and nearest the earth on May 18 at 10:00 p.m. (distance 224,550 miles). It will be at apogee again on May 30 at 10:00 p.m. (Distance 251,700 miles).

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CHEMISTRY

Food Drugs and Poisons Reviewed in New Volume

COSMETICS that quite literally "put your eye out," foods that have less quality in the package than they have in high-priced magazine advertising, patent medicines "testimonialed" in the same newspapers that carried the death-notice of their recommenders, are passed in review in a new book by Ruth deForest Lamb, Chief Educational Officer of the U. S. Food and Drug Administration. (*American Chamber of Horrors: Farrar and Rinehart.*) The book is in large part the story of the struggle over the Copeland bill, due to come up for action before the adjournment of the present Congress.

This bill has been considerably modified from the form in which it originally appeared, in the days when it was dubbed the "Tugwell Bill" by its opponents, who hoped to damn it by giving it a "bad" name. Some of the provisions which have been taken out Miss Lamb regrets, notably the grading provisions for canned goods and other packaged foods. She relates case after case of misguiding labeling that is still not misbranding according to the letter of the law, naming a number of highly advertised products and telling of the activities of their manufacturers and advertisers, whom she also names. Yet despite these lacks in the revised bill, Miss Lamb feels that it should be enacted, as the best that we are likely to get at the present time, and certainly as an advance over the present thirty-year-old Wiley Act.

One story told by Miss Lamb, that has not been covered at all in other recent books that tell the consumer what a sucker he often is, comprises the chapter, "How Much Poison?" It concerns the struggle over the knotty problem of spray residues on fruits. Fruit must be sprayed, at present mainly with lead arsenate, a double poison. If this is not done, the insects will get it before we do. But the poison spray sticks on, and since both arsenic and lead are cumulative poisons, piling up in the body until there is enough to cause serious illness, the spray residue must be eliminated before the fruit can be safely marketed. Efforts to introduce really effective spray residue removal, particularly in Pacific Coast orchard regions, have provoked some of the bitterest agrarian fights in recent history, rising at times to threats of murder, mayhem, and mobbing.

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