



string. So if you get acquainted with those now visible, you will be better able to enjoy their brothers and sisters as they come into view.

Celestial Time Table for August

Tuesday, August 1, 7:00 p. m., Moon farthest away, distance 252,400 miles. **Saturday, August 5,** 8:46 a. m., Moon passes Jupiter. **Monday, August 7,** 4:01 a. m., Moon passes Saturn. **Tuesday, August 8,** 4:18 a.

m., Moon at last quarter. **Friday, August 11,** early a. m., Perseid meteor shower seen at best. **Monday, August 14,** 10:53 p. m., New moon. **Tuesday, August 15,** 3:00 a. m., Moon nearest, distance 222,000 miles. **Monday, August 21,** 4:21 p. m., Moon at first quarter. **Saturday, August 26,** 9:02 a. m., Moon passes Mars. **Monday, August 28,** 2:00 a. m., Mercury farthest west of sun, visible as morning star; 10:00 p. m., Moon farthest, distance 252,500 miles. **Tuesday, August 29,** 5:09 p. m., Full moon.

Science News Letter, July 29, 1939

PHYSIOLOGY

Ten B Vitamins Now Reported And More May Be Discovered

How Many and Which Are Essential in the Human Diet Has Not Been Settled, But Ordinary Diet Supplies All

VITAMIN B has now been chemically sliced into 10 different vitamins or factors and the end is not yet in sight, Prof. C. A. Elvehjem, of the University of Wisconsin, discoverer of pellagra-curing nicotinic acid, the third B vitamin, told a chemical research conference at Gibson Island, Md.

"The boundaries of the B complex are still unknown," Prof. Elvehjem declared. The B complex is "the group of water-soluble vitamins found in yeast." Liver and whole grains are also richly supplied with this vitamin.

Oldest of the B vitamins is the chemical now known as thiamin, which prevents and cures the nerve disorder, beriberi. Next in line is riboflavin, recently discovered to be essential for human health but known much longer as one of the B vitamins through discoveries of the dire effects on laboratory animals of a lack of this substance.

Nicotinic acid, preventive and cure for pellagra, was the third B vitamin

to be cut out of the group by chemical dissection.

The spectacled eye factor is the picturesque way Prof. Elvehjem described one of the newest members of the B group. Rats lacking this vitamin develop the condition described as spectacled eyes.

Pantothenic acid, acclaimed recently as a vitamin essential for all living forms, is the same vitamin that prevents a skin disorder in chicks, Prof. Elvehjem said.

The anti-gray hair member of the B group is apparently a rat vitamin only. Another rat vitamin is B₆, also called Factor 1, and fortunately is now identified chemically and available in synthetic form. The chemical identification is fortunate because it helps to clear up some of the confusion about these vitamins.

Factor W, for rats, and Factor U, for chicks, and another substance known at present as vitamin M, apparently complete the list of the 10 B vitamins so far known.

How many and which of them, outside of thiamin, riboflavin and nicotinic acid, are essential in the diet of humans has not been entirely settled. The difficulties of chemical separation of the B vitamins from each other suggests that people eating plenty of food sources such as whole grains, liver and other fresh meat, and yeast, cannot fail to get all of the B vitamins.

The members of the group already available as chemical substances, thiamin and nicotinic acid, for example, are valuable for patients too sick to eat and assimilate the vitamin-containing foods.

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BIOLOGY

Sex Hormones from Bees May Affect Vertebrates

NEW evidence that biologically "we are all members one of another" comes out of the beehive. What seems to be a female sex hormone, or gland secretion that powerfully influences the development of the reproductive capacity, produced by worker bees, has been shown capable of effects in animals so remote from the bee world as rats, and therefore presumably on other mammals as well.

The evidence is reported by Dr. Henry L. Heyl of The Children's Hospital, Boston. He found that a chemically prepared extract of royal jelly, the special food given only to bee larvae destined to become queens, when injected into the bodies of immature female rats caused a precocious development of the tissues of their ovaries directly surrounding the egg cells.

Royal jelly is a most peculiar stuff. It is secreted in glands in the mouth of the worker bee. Fed to female bee larvae in a still-undifferentiated state, it causes them to mature rapidly and become full-fledged females or queens, with functional reproductive glands. The other female larvae, comprising the vast majority of the brood, receive royal jelly for only the first three days and develop into workers, which are female insects with undeveloped ovaries and under ordinary circumstances incapable of producing eggs.

Although the royal jelly confers upon the queen bee the power to become the mother of the hive, it does not seem to carry with it the gift of the so-called maternal instinct. Says Dr. Heyl, "The worker exhibits many maternal instincts, the queen none." These insect spinsters not only serve as nurses for the offspring of their larger, fruitful sister; they even produce the wonder-food