Hot gases drawn out into a gigantic filament by such a glancing encounter between stars would explode just as a deep sea fish bursts when brought to the surface and released from the high pressure surrounding it, reasoned Dr. Lyman Spitzer, Jr., also of Princeton. Instead of forming solid bodies like the planets, his calculations showed, a stellar encounter would simply produce an extended gaseous nebula around one or more of the stars involved.

Theory Under Fire

As you would expect, critical astronomers are already trying to puncture holes in the new Dust Cloud theory, tentatively suggested about a year ago. During the last year it has been further developed, and many details cleared up. Today Dr. Whipple spends much of his spare time dreaming and figuring out ways to make the hypothesis answer all questions.

The planets, he elaborates, were given a final "bath of flame," just before they developed as we know them today. This was particularly true of Mercury and Venus, nearer the sun than the earth.

This intense heat probably lasted only a few years. But during this time it burned up whatever atmosphere may have surrounded Mercury and Venus, and dried out much of that on the more distant planets. Those nearer the sun, particularly Mercury, also probably shriveled up through loss of considerable matter as well as atmosphere.

The earth had long ceased to be gaseous when it was submitted to this intense heat. A completely gaseous earth could probably not have survived. Instead it probably was molten during this phase of its development.

As more is learned about the universe around us, the greater will be our knowledge of how our own solar system was born. When we look at one of those small, dense dust clouds that fascinate Dutch-born Dr. Bart J. Bok of Harvard Observatory, we may be watching the birth of another solar system. When Dr. Spitzer figures out another step in the process by which individual atoms stick together to form minute solid particles, he may be explaining how our own solar system began.

Exactly what happened 2,000,000,000 to 3,000,000,000 years ago, when our solar system was created, may not be known during our lifetime. The Dust Cloud theory probably isn't the final answer. But it may be another stone in the path that leads to a completely satisfactory theory. An explanation of the evolution of the solar system is itself slowly being evolved.

Science News Letter, April 24, 1948

MEDICINE

New Drug Checks Cholera

This sulfa drug, known as "6257", is a powerful killer of cholera germs. It also protects the healthy from infection, Indian scientists find.

➤ A NEW sulfa drug that cut cholera deaths from more than 60 to only four per hundred cases is announced by four Indian scientists in the journal, *Nature*, (March 13). The scientists are Drs. S. S. Bhatnagar, F. Fernandes, J. De Sa and P. V. Divekar of St. Xavier's College, Bombay.

The drug is known as "6257" for short. It is a condensation product of two molecules of a sulfa drug, 2 p-aminobenzene sulfonamidothiazole, and three molecules of formaldehyde.

Preliminary tests showed that it was a powerful killer of cholera germs in the test tube. When injected under the skin of mice it gave 100% protection against cholera.

It was then tried in patients in the Tanjore District of South India where there were cases of Asiatic cholera in many villages. The patients were treated in their homes without any other medical aid. Most of them were under-nourished women and children who had been vomiting, having diarrhea and suppression of kidney function.

Vomiting was invariably stopped and the diarrhea much reduced within six hours after treatment with the new sulfa drug was started. Kidney functioning was restored by the ninth hour. By the fifth day, the cholera germs were absent from the body wastes. The drug was given by mouth morning and evening for five days, although when given by mouth to the mice it had been less effective than when injected under the animals' skin. At the time of the report it had been given to 85 cholera patients in 27 villages.

Giving the drug to other residents of the villages kept them from becoming infected. The Indian scientists emphasize the importance of this preventive aspect of the drug in addition to its curative value.

Development of this new anti-cholera drug started with a finding of Dr. Bhatnagar's in 1939. This was that cholera germs were killed in the test tube in less than half an hour by a 10% solution of hexa-methylene-tetra-amine in normal salt solution. Further studies, although interrupted by the war, led to developments of hopeful compounds made by linking hexamines to a sulfa drug.

"A chance conversation with the scientific department of Ciba," the Swiss drug manufacturing house at Basle, the scientists report, led to the Swiss firm developing the compound now known as "6257."

Science News Letter, April 24, 1948

AGRICULTURE

World Food Crisis Eased FAO Committee Reports

➤ THE hungry world is not suddenly going to be well fed, but there seem to be fair indications that it will not have to pull its belt in quite so tight in 1948 as it did in 1947. The report of the International Emergency Food Committee of FAO lists three developments, unforeseen six months ago, that have eased the world food crisis "and warrant cautious optimism for the future." They are:

1. An unusually mild winter in Europe;
2. Record harvests in Australia, which