

ing the fall of 1933 of precipitation well below the normal for 1933 to 1934. This proved to be a very dry year not only in California but throughout the whole United States as well.

Science News Letter, June 8, 1935

Weather States "Match" In Widely Separated Regions

By H. H. CLAYTON, Editor, World Weather Records

WEATHER conditions in certain parts of the earth closely resemble conditions occurring simultaneously in far distant regions. These conditions may be alike or they may be opposite in character. For example, excesses of temperature in central North America are frequently coincident with excesses in central South America. An excess of rain in the central United States is frequently coincident with a deficiency of rain in Australia. An excess of pressure in central South America is usually coincident with a deficiency of pressure in India.

These coincident occurrences are generally accepted by meteorologists, but they are not so well agreed as to whether there are regular meteorological cycles. The reason of this difference of opinion is evidently due to the fact that meteorological cycles are much more complex than has been generally supposed.

The reason for this complexity, in my opinion, is due to the fact that opposing centers of oscillation in the atmosphere are subject to progressive motion; so that any particular region is first in one center of oscillation and later in an opposing center, and all traces of periodicity are lost in the opposing oscillations.

It is now becoming evident that the changes in position of these centers are brought about by changes in intensity of solar radiation. When these two facts are accepted, namely, the fact of moving centers of oscillation in the atmosphere and the influence on them of changes in solar radiation, I believe the study of weather cycles will make rapid progress.

In my opinion the great drought in the region between the Mississippi and the Rocky Mountains was closely connected with solar changes. In order to understand it, not only the sunspot changes, but longer and shorter changes of solar activity will need to be taken into account.

Science News Letter, June 8, 1935

In total bulk, the biggest whales are bigger than any dinosaur that ever lived.

MEDICINE

Artificial Fever With X-Ray Destroys Animal Cancers

FEVER treatment combined with small repeated X-ray doses give better results in treatment of a certain type of cancer in rabbits than either method alone, Dr. Stafford L. Warren with John J. Jares, and Otto Sahler of Strong Memorial Hospital, Rochester, N. Y., have found in preliminary tests of this method of attack on cancer.

This study was announced in the report of the International Cancer Research Foundation of Philadelphia which is supporting Dr. Warren's research.

Application of Dr. Warren's work to human cancers is far in the future, if it proves possible. So far he has worked with only one type of cancer and only on small numbers of animals.

Three years ago, working with funds from the Rockefeller Foundation, Dr. Warren found that high fever temperatures would kill cancer cells outside the body within a definite period of time. He found the high temperature also destroys cancer cells in the body, but only in one-fifth of the cases. Small repeated doses of X-rays, called fractional doses, destroyed the cancers in nearly half (42 per cent.) of the cases. When the fever treatment was combined with the fractional doses of X-rays, the percentage of apparent cures was doubled (84 per cent. of the cases).

Other research reports announced by the International Cancer Research Foundation include:

For the first time human cancers can be kept alive and growing for long periods of time outside the body. Dr. George O. Gey of the Johns Hopkins Medical School reported this new method which should aid greatly efforts to find better ways of destroying cancers. The mystery of why cells become malignant may be nearer solution.

The preparation of another cancer-producing substance from coal tar by Prof. J. W. Cook and associates at the London Free Cancer Hospital. Prof. Cook's latest discovery shows the importance of a certain kind of chemical architecture in cancer-producing substances from coal tar. A combination of carbon and hydrogen known to chemists as the methyl group—the same methyl group that is in deadly methyl alcohol or wood alcohol—occurs twice in the new cancer-

producing compound. Apparently more important than the methyl group itself, in connection with the cancer-causing property of the new substance, is the place where it is attached to the substructure of the new substance as its molecule is built up. Even a single methyl group at "position 5" causes marked cancer-producing activity.

Calories also have an important relation to cancer. Studies on this phase of the problem have been made by Dr. Fritz Bischoff and co-workers of the Santa Barbara, Calif., Cottage Hospital. Growth of cancers in mice is notably affected by reducing by one-half the amount of calories in the diet of the mice, the California scientists found. Weight loss in itself is not a clear indication of the nutritional state, they found, as other factors enter in. Consequently they point out to fellow scientists the importance of determining caloric intake.

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MEDICINE

Lack of Publicity Blamed For Thriving of Quacks

LACK of publicity in the medical profession was blamed for the thriving of so-called health lecturers and psychological and medical quacks by Dr. Charles A. Rymer of Denver, Colo., speaking to the American Psychiatric Association.

The misinformation spread by these quacks, especially in the field of sex, may cause untold damage to the persons who are already unstable mentally and emotionally and to those who try to obtain free medical information in order to treat themselves, he said.

It is the public's growing and widespread interest in science that makes possible the success of these quacks, Dr. Rymer pointed out.

"People are impressed with the advances which have been gained through the scientific approach, but since they lack the proper prospective and background to determine what constitutes science, they attribute almost magical properties to anything labeled 'scientific,'" he said.

"What substitute has the profession to offer?" he demanded of his fellow physicians.