

Herbert J. Gough of London, engineering; Sir Daniel Hall of London, agriculture; Dr. C. U. A. Kappers of Amsterdam, anthropology and physiology; Dr. Wolfgang Koehler of Berlin, psychology; Dr. Tullio Levi-Civita of Rome, mathematics; Dr. Emilio Mira of Barcelona, psychology; Dr. William Oualid of Paris, political economy; Dr. Henri Pieron of Paris, psychology; Dr. J. J. Sederholm of Helsingfors, geology; Dr. Charles E. Spearman of London, psychology, and Dr. R. J. Tillyard of Australia, entomology and paleontology.

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## AERONAUTICS

## Stratosphere Shell Prepared For Navigators

See Front Cover

**T**HE LITTLE metal sphere that will be the stratosphere home of two men and scientific instruments for a few hours next month is rapidly being completed. (*SNL, May 27, '33, p. 323*) It is pictured on the front cover with Dr. Jean F. Piccard emerging at the unfinished vertex of the "orange peel" sections of dometal, the magnesium alloy one-third lighter than aluminum.

The sphere is truly a shell of the sky. Though seven feet in diameter, its metal sheeting is only one-eighth of an inch thick. The weight is 200 pounds, compared with 300 for the sphere used by Prof. Auguste Piccard last year. There are to be two manholes and eight portholes distributed so that vision will be free in all directions. The floor will be made of dometal and a space four feet square is being left for the occupants.

Four struts will be used inside, and shelves at three levels will hold all instruments, ballast and food in place. Ballast will be dumped through a tank which may be sealed to prevent loss of pressure. The navigators expect to close the portholes at an altitude which will leave the pressure at about eight and a half pounds after they ascend ten or eleven miles. The ascent is to be made from Chicago in connection with the Century of Progress exposition.

The gondola will be painted a light color on the top and black on its lower sides and bottom. Thus the metal's ability to absorb heat in the morning and afternoon, when heat will be needed most, will be increased.

*Science News Letter, June 17, 1933*

The oldest known medical school was founded by the Persian conqueror Darius in Egypt.

## ENDOCRINOLOGY

# Adrenal Cortex May Regulate Salt and Water in Body

## New Type of Gland Disorder Brings Obesity Apparently By Disturbing Body's Handling of Water

**T**HE VITAL cortex of the adrenal glands may have an influence on the regulation of salt and water in the body similar to that of insulin on sugar, the parathyroid glands on calcium and the thyroid gland on iodine. Evidence indicating that this may be the case was presented by Dr. R. L. Zwemer of the College of Physicians and Surgeons, Columbia University, at the meeting of the Association for the Study of Internal Secretions in Milwaukee.

The salt in this case is sodium. It is a loss of sodium from the body rather than any great increase in acid that produces the lower carbon dioxide combining power of the blood which is an early indicator of insufficient adrenal gland functioning, Dr. Zwemer believes.

In cats that have lost their adrenal glands, extract of the adrenal cortex increases the amount of sodium and chloride in the blood, Dr. Zwemer and his associate, Dr. Ruth Sullivan, found.

Drs. Zwemer and Sullivan working with animals, and Drs. Robert Loeb and Dana Atchley treating patients, found that giving common salt by mouth is helpful in conditions like Addison's disease in which the cortex of the adrenal gland is not producing enough of its vitally necessary hormone.

Cats that were given salt after removal of the adrenal glands survived twice as long as similar animals that got no salt.

While salt is helpful in these conditions of adrenal insufficiency, some of the adrenal cortex hormone or extract must be given to help out. Giving too much salt in these cases is as bad as too little. Drs. Zwemer and Sullivan have been able to calculate the exact amount of sodium necessary for cats suffering from adrenal insufficiency.

A new, hitherto unrecognized glandular disorder was reported by Dr. Leonard G. Rowntree of Philadelphia and Dr. Louis A. Brunsting of Mayo Clinic. The disorder was seen in two young women, 20 years old, who were brought

to the Mayo Clinic because they had suddenly become very fat. They could not get rid of the excess weight by any of the measures for reducing.

"Both patients were superlatively feminine in appearance with luxuriant hair and exaggerated feminine configuration," the physicians found on examination. Both patients had matured at a younger age than the normal.

With the idea that the obesity was due to derangement in the body's handling of water, the patients were given treatment to remove the water from their bodies. This was done by the use of ammonium salts and the newer mercury compounds. As a result, the weights of the two patients were reduced to practically normal.

After their return home, one patient regained the weight she had lost. The other patient was able to keep her weight down by continuing the ammonium and mercurial compounds and by restricting her intake of water.

The condition might be the result of an early excess of one of the hormones of the pituitary gland, known as Prolan A, Drs. Rowntree and Brunsting suggested.

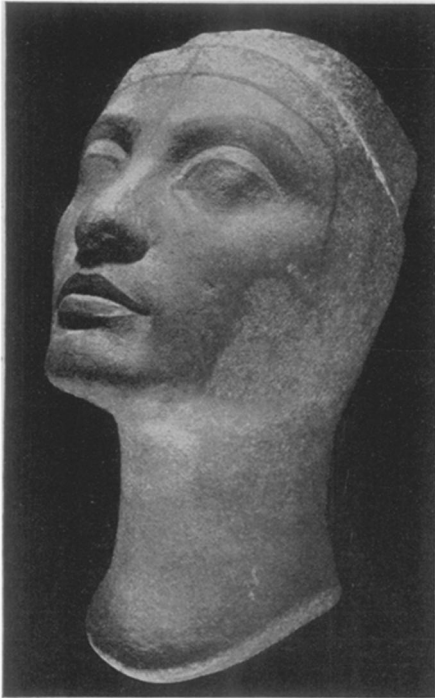
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## ARCHAEOLOGY

## Tut-Ankh-Amen's Mother-in-Law

**B**EAUTIFULLY sculptured in the almost impossibly hard stone, quartzite, a portrait head newly found at Tell el Amarna in Egypt may prove to be an image of Queen Nefertiti one of whose daughters married the long-posthumously famous Tut-ankh-amen. It has been compared with the famous portrait bust of Nefertiti now in the Berlin Museum in its slender beauty and its aristocratic poise.

For some reason the sculptor never finished his work. The back of the head and one side of the face were left unsmoothed, with the black guide-marks still on them. But the artist was suffi-



UNFINISHED BEAUTY

ciently satisfied with his partly-completed work to paint the stone lips a bright red.

The same British expedition which uncovered the new portrait head also found a broken sculpture, in unfinished condition, showing the face of Neferiti's consort, the "heretic pharaoh" Ikhnaton, who tried to introduce a monotheistic religion in the place of Egypt's worship of many gods. Another discovery was a slab bearing in low relief the portraits of Ikhnaton and of his son-in-law, Smenkhkara.

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## GEODESY

## Sea Level Higher on Pacific Than on Atlantic Coasts

**S**EA LEVEL is not strictly on the level. It is higher in some places than it is in others, H. G. Avers, chief mathematician of the division of geodesy, U. S. Coast and Geodetic Survey, informed scientists attending the Fifth Pacific Science Congress in Vancouver.

At Prince Rupert, B. C., mean sea level is 1.64 feet higher than it is at Halifax, N. S.; at Seattle it is 1.18 feet higher than at Portland, Maine, and at San Diego, Calif., it is 1.74 feet higher than it is at Fernandino, Florida.

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## PSYCHIATRY

# Mental Attacks Return Mind Of Young Woman to Infancy

Parental Cruelty is Apparently Responsible For Adult Using Baby Talk and Amusing Self With Ticking Watch

**T**IME TURNED backward for the young married woman, 20 years old, described by Dr. Mandel Sherman and Blake Crider, of the University of Chicago, in a report to the *American Journal of Psychiatry*.

After an accident in which she wrecked the family automobile, this girl, whose last name is withheld from publication, was subject to severe attacks sometimes diagnosed as epileptic seizures, in which she would be unconscious and insensible to pain. Following these attacks she would literally become as a little child.

One such turning back of time took her almost to infancy. She spoke in typical baby talk, and could neither write nor draw pictures. Although she is an inveterate smoker, she had no idea of what to do with a cigarette. She did not recognize her own name, Mabel Ruth, and then it was remembered that the Ruth was an addition that had not been made until she was 14 years old.

Another attack took her still further back into babyhood. She smiled and played just as would a child about two years old. She was greatly amused by the ticking of a watch, reached for it and held it to first one ear and then the other, and then would toss it into the air as though it were a ball.

In other attacks, she re-lived various experiences of her childhood—many of them connected with some bit of cruelty of her foster mother.

For that seemed to be the origin of her mental troubles. Mabel Ruth had been placed in an orphanage by her parents during her first year and was adopted when she was 16 months old. Not until she was 12 did she hear that her foster parents were not her own, and then it was through unkind gossip that it reached her ears. One aunt told her untruthfully that she was the illegitimate daughter of her foster father.

This foster father was kind to her, but the mother was cruel and would slap and kick her and even strike her with a broom handle. Her foster rela-

tives were considered community problems and several had very unsavory reputations. At 19 she married to get away from home, but was not in love and the marriage was very unhappy. It was after the marriage that the attacks became most severe.

During the returns to childishness, standardized mental tests were given her, and she passed them as would the child she seemed to have become.

Treatment consisted in discussing her trouble with her and showing her that past events and difficulties were the basis for her present attacks. Through a local newspaper she was enabled to locate her real parents. Within a year she became apparently normal.

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## AGRICULTURE

## Hot Weather Favors Belated Spring Planting

**S**UDDEN hot weather and a cessation of rains, coming on the heels of a most persistently wet, cold spring, has already undone much of the mischief wrought by the earlier unfavorable conditions, a survey by the U. S. Weather Bureau has disclosed. Over most of the grain belt states, where spring planting was held back until farmers had begun to be alarmed, the bulk of the crop is in. Farmers have put in extra long hours at the planting, in many cases working late at night. The high temperatures, ranging from 10 to 13 degrees above normal, have favored quick germination and growth.

On the basis of past records, the weather during May and to date in June should be favorable for a good yield of spring wheat. There has been a fairly close correlation between wet, warm weather in May and June and a good spring wheat crop in former years; and the weather conditions in the spring wheat area so far are those of a "good year."

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