

because of its Mixtec Indian inhabitants. The Mixteca is in the State of Oaxaca, in southern Mexico.

Miss Reh's own account of her explorations follows:

Huالمelulpan is an ancient Indian city in the Mixteca. The present town of San Martin Huالمelulpan of Mixtec-speaking Indians is built in the midst of the mounds and terraces of the ancient civilization. Old and new crowd one another.

A new road cuts an ancient stairway and penetrates an artificial mound. And on this mound the early Christian church of the village stands. Back of the church rise terraces above terraces of the old city, the last one surmounted by a pyramid. Treasure-hunting Indians have quartered the old pyramid.

The pyramid back of the village church, which Indians have excavated, contains a smaller pyramid within. From what can be seen of the inner structure its plaster-faced sloping walls are intact, which is unusual in such buried buildings. The treasure-seekers found an inner room in the pyramid, lined with smooth stone and a tunnel heading south. In these apertures, they say, were found idols and carvings.

These idols and carvings are now in the city hall. Most important is a slab over three feet high, carved with the date "Thirteen Stone-Knife," the numeral being expressed in the Mayan dot and-bar system.

Mayas and Indians Linked

This stone slab, found in the heart of the Mixteca region, is an important link in the mysterious relationship between the Mayan culture and Indian civilizations in the center of Mexico. The ancient pattern of Mexico is not yet known, and the finding of this mode of writing in this place is of great significance.

Another sculpture is a human form six feet tall. The big figure has slanting eyes, triangular nose, rounded mouth with curling fangs. Tigers with snarling mouths are among the smaller sculptures.

One exquisitely carved jade figure is among the pieces picked up by villagers in their cornfields on the mounds and terraces. Small pottery heads found in the fields are handiwork of various cultural types of ancient Mexico. They can be arranged from the "Archaic" people of early time to highly evolved "Mixtec" types.

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ANTHROPOLOGY

Colonial America Revealed As Melting Pot by 1790 Census

Less Than Two-Thirds of Pioneers Were English; Remainder Largely Irish, Scotch, German, French and Dutch

A WIDE assortment of the ingredients for the American melting pot were already in this country when the first census was taken, back in 1790.

This fact is brought out in a study of the make-up of America in nationalities, as shown in the approximately 4,000,000 names taken in the first census. The American Council of Learned Societies sponsored the research, and the American Historical Association has just published the results.

"Many prevailing impressions regarding origins of colonial America are contradicted by this study," says Howard F. Barker, research associate of the Council and one of the authors of the work.

Less Than Two-Thirds English

The colonial fathers, dames and children who were the people of George Washington's first administration, were of English, Irish, Scotch, German, French, Dutch, and Swedish extraction. Outlying regions also had Spaniards.

The survey shows that, of the 3,200,000 white settlers, the English constituted less than two-thirds, and English, Scotch, and Irish together not much more than 80 per cent. Germans account for nine per cent., Dutchmen three per cent., Frenchmen about two per cent., and Spaniards and Swedes each about one per cent.

No consistent records of arrival of settlers were kept in those times, Dr. Barker explains. No one questioned arriving immigrants as to their nationality or their ancestry. The best method that the research historians have hit upon to identify nationalities has been to study the family names in the census. The method calls for specialized knowledge of foreign names, languages, early American history. Even by 1790, the typically American process of revising names was going on. Non-English names, especially, were likely to be simplified or translated into names of English sound.

"It is incorrect to credit colonial

American population with a homogeneity which did not exist," Mr. Barker states. "But it is well to note that most of the earlyday Americans who were not from the British Isles were from the Rhine country."

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PHYSIOLOGY

Explains Why Raw Weather Is Painful to "Rheumatics"

COLD, MOIST AIR has a heat conductivity greater than that of cold dry air; it produces a "raw" feeling and excites the nerve endings which reflexly cause the tightening-up effect that leads to pain in rheumatic people. This is the explanation given by Sir Leonard Hill, British physiologist, in the London scientific periodical *Nature*, in answer to the query: "Why is damp cold weather unpleasant and peculiarly bad for those suffering from rheumatism?"

"Heat expands and softens the tissues, bringing more blood and lymph into the parts, while cold tightens them up," Sir Leonard said. He suggested that it is this change which leads to pain in rheumatic people.

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ASTRONOMY

Sunspots Hold Secret Of Understanding Stars

THE KEY to the problem of the sun's structure lies in explaining why the sun spots are giant magnets, Dr. Donald H. Menzel of the Harvard College Observatory, told the New England section of the American Physical Society. The sun is a star, similar to many that dot the heavens; and Dr. Menzel observed that it offers the only star surface that can be studied in detail.

During the past few weeks the sun has been extraordinarily spotted considering that the time of minimum of sunspots is approaching. Thirty spots in



U. S. Naval Observatory
UNUSUAL SUN SPOTS

These spots appeared on the sun when little expected near the minimum of the sunspot cycle. They may have disturbed radio reception.

four groups were observed at Mt. Wilson Observatory at one time. Dr. Seth B. Nicholson, of this Observatory, estimates that the minimum of sunspottiness will occur near the end of this year or early in 1934. The first spots of the next cycle may be expected any day now.

"Until science can answer most of the questions about the sun, it will be impossible to get a satisfactory theory of the nature of the stars," Dr. Menzel said. "Unfortunately known facts about the sun are completely overbalanced by our ignorance of solar matters. We know the sun's size, mass temperature and approximate chemical composition of outer layers. We recognize various surface features such as sunspots, atmosphere, prominences and corona.

"We do not understand why sunspots occur or what holds up the sun's atmosphere or what forces cause prominences to shoot out like volcanic eruptions, or what is the composition of the corona."

One of the clues to many of these phenomena and a clue that has not been interpreted is the existence in sunspots of enormous magnetic fields.

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MEDICINE-CHEMISTRY

Lack of Vitamin B₂, a Cause Of Pernicious Anemia

Latest Researches Also Show Victims May Eat Proper Foods But Then Fail to Absorb Vitamins in Digestive Tract

ONE CAUSE of pernicious anemia may be lack of vitamin B₂ in the diet, Dr. William B. Castle, of the Thorndike Memorial Laboratory, Boston City Hospital, and Harvard Medical School, reported to the American College of Physicians. His studies also suggest a new idea of the relation between certain vitamins and the conditions caused by their lack.

Dr. Castle received the John Phillips Memorial Prize of the College. Associated with him in the anemia research were Drs. Wilmot C. Townsend, Clark W. Heath, and Maurice B. Strauss of the Thorndike Memorial Laboratory, and Dr. C. P. Rhoads of the Rockefeller Hospital.

Liver may be a means of curing pernicious anemia, but lack of liver in the diet is not the cause of the disease. Pernicious anemia develops in those people whose stomachs cannot make their own supply of liver extract from a normal diet. When vitamin B₂ is fed to a normal human being, his stomach makes it into something that acts like liver extract because of a reaction with what Dr. Castle calls the intrinsic factor in the stomach juice. It is chiefly lack of this intrinsic factor which causes the usual cases of pernicious anemia and also some of those occurring in mothers before the birth of a child. After the child is born, however, the intrinsic factor reappears to a certain extent, as it did in one exceptional case of pernicious anemia following liver treatment.

Where Found

Vitamin B₂ is found in meat, milk, eggs, the outer layer of rice, and yeast. It is lack of this factor in the diet which produces the type of pernicious anemia found in the tropical disease, sprue, and in celiac disease, an intestinal ailment of children. The vitamin factor in the cause of pernicious anemia Dr. Castle calls the extrinsic factor.

A third important factor in the de-

velopment of this disease is what Dr. Castle calls "defects of absorption." Even if the vitamin is eaten in abundance and the intrinsic factor is present in the stomach juices, the body may fail to absorb the product formed by the interaction of these two factors. This is seen in certain cases of pernicious anemia or sprue in which enormous doses of liver extract have little effect when given by mouth, whereas the usual dose given by hypodermic produces a typical response.

Dr. Castle's researches have thus shown that there are three ways in which the formerly fatal disease, pernicious anemia, may be caused. It is a deficiency disease in a novel sense, since the deficiency is not so much a lack of vitamins in the diet as the failure of a reaction with a vitamin in the digestive tract or elsewhere in the body.

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PHYSICS

Cosmic Rays Warm Bodies In Interstellar Space

ENERGY supplied by cosmic rays would raise the temperature of a body in interstellar space to 3.1 degrees over the absolute zero of temperature, Prof. E. Regener of Stuttgart, Germany, states in a letter to *Nature* basing his calculations upon new measurements of the intensity of cosmic radiation.

Dr. A. S. Eddington, Cambridge physicist, had calculated that a "black" body placed in our system of stars, but sufficiently far away from any one star in particular, would acquire an equilibrium radiation corresponding to a temperature of 3.18 degrees above the absolute zero, due to the light coming to it from all the stars. Combining the two sources of energy it is found that the temperature of a body absorbing both radiations would be 3.7 degrees absolute. The radiation is proportional to the fourth power of the temperature.

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