

earlier and more primitive people, because the makers of the Archaic pottery had established their settlements with careless disregard of earthquake zones.

It is not yet determined, however, whether these early inhabitants built such simple homes that they did not fear the rocking of houses and the falling of walls, or whether there were fewer earthquakes in that part of the world then.

The part played by earthquakes in the wanderings of these prehistoric American tribes is being closely studied by Dr. Gamio, who says that earthquakes have had a marked influence on the development of human life.

CRYSTALLINE INSULIN REQUIRES LONG STUDY

Insulin has been reduced to a purity so great that it comes down out of solution in the form of minute crystals, that shine like bits of uncut diamond when viewed through the microscope. Yet this result has not satisfied Dr. John J. Abel and his corps of co-workers at the school of medicine of the Johns Hopkins University. They expect to spend the coming two or three years, at least, investigating the properties of these crystals.

The insulin used in medicine is effective clinically, Dr. Abel told a representative of Science Service, but it has been recognized from the first that chemically it is far from being a pure product. Most chemical compounds indicate the attainment of a state of real purity by forming regular crystals, and nobody had been able to get crystals of insulin. The trouble was, Dr. Abel explained, that the insulin was all mixed up with a lot of other unknown substances that would precipitate at very nearly the same electro-chemical state of the solution.

Beginning with the ordinary insulin used in medicine, Dr. Abel and his associates passed it through an elaborate series of precipitations with various chemicals and repeated solutions in weak acetic acid. The crystals that come down at the last stage are very small. After settling out at the bottom of the flask they were picked up with a fine-pointed, rubber-tipped medicine dropper. The process of manufacture is so slow and difficult that months of work have resulted in the preparation of only a few hundred milligrams of the precious stuff.

This pure crystalline insulin is extremely potent, Dr. Abel states. One milligram of it, or a bit as large as a rather small grain of sand, has as much power to reduce blood sugar as is possessed by 100 clinical units of the solution used in medical practice. One fiftieth of a milligram will throw a $4\frac{1}{2}$ pound rabbit into convulsions, which are quickly cured, however, by injecting a little sugar solution into the rabbit's veins.

Whenever a chemist succeeds in refining a natural compound to a purity that will result in crystal formation, the next step is usually expected to be the analysis of the crystals, with a view to the possible manufacture of the compound by artificial means, so that a perfectly uniform product may be obtained at a lower price. But Dr. Abel states that a year or more of work must intervene before the analysis can be completed. The synthesis of the compound will undoubtedly be a matter of

the greatest difficulty and may be impossible in the present state of our knowledge.

Dr. Abel is no novice in the field of purification of gland secretions. Three of the four extracts of the various ductless glands so far crystallized or brought to a very high concentration are checked up to his credit. In addition to the recent crystallization of insulin, he isolated epinephrin as a mono-benzoyl derivative from the extract of a ductless gland situated near the kidneys, and he has also prepared a highly purified and very potent tartrate, not yet crystallized, from extracts of the pituitary body. The fourth internal gland secretion to be purified is thyroxin, the extract of the thyroid gland of the throat region, which was crystallized by Dr. Edward Kendall of the Mayo Clinic.

BLUE AND ORANGE AUTO LIGHTS TO ELIMINATE GLARE

Use of blue or orange headlights on automobiles, depending on which way the car is running, may soon be common on our roads, and will lessen the possibility of accidents due to glaring lights. This is one of the essential features of a system advocated by Karl D. Chambers, of Asheville, N.C. and demonstrated by him to the summer meeting of the Society of Automotive Engineers.

Common methods of eliminating glare now in use were declared by Mr. Chambers to be of little value. Even with special lenses, which are supposed to keep the light below the level of the wheels, an approaching motorist may receive the full glare of another machine if it is coming over the crest of a hill, if the back of the other machine is loaded unduly, or if the headlight is slightly out of adjustment, he declared.

Dimming was also stated to be of doubtful utility, for when the eye is used to the bright lights, and they are suddenly dimmed, it takes from three to five seconds for the eye to become accustomed to the faint illumination. While this readjustment of the sensitive lining of the eye is taking place, the car going thirty miles an hour will travel from 132 to 220 feet while the driver is practically blind.

In his new system, Mr. Chambers takes advantage of the fact that a colored glass filter transmits light through it of its own color, but stops that of a complementary color. Two filters, one blue and the other orange, are attached to the windshield, ordinarily swung up out of the way, but when the blue filter is in place, a similar blue filter is automatically placed over the headlight, while when the orange filter is in use, the headlights shine with orange light.

The inventor describes the operation of his system as follows:

"If a car is going north, let us say on the Dixie Highway, and is conventionally using blue headlights, the driver must be looking through a blue filter, quite transparent to the light of the wave length that his headlights are throwing on the path of his car. Consequently, he can see practically the same as though he were driving with white light with no approaching car causing glare.

"A car coming south now approaches. On account of the fact that it is southbound