cally every hydrogen atom in it double the weight of ordinary hydrogen.

Prof. Harold C. Urey, Columbia University chemist and one of the group that two years ago discovered the existence of deuterium or heavy hydrogen, described the production of heavy water on a scale and at a low cost hitherto unattained.

Water particularly rich in heavy hydrogen is obtained from a commercial water electrolysis plant and concentration is effected in a laboratory plant that produced eight to ten grams (approximately one-third ounce) per day. The production cost is about $15 a gram, which is about a tenth of the costs reported from other laboratories.

The heavy weight isotope of hydrogen should be christened "bar-hydrogen," Prof. R. W. Wood of Johns Hopkins suggests in a letter to *Science*.

The symbol would be H with a bar above it, if Prof. Wood's suggestion were adopted, and compounds would be called bar-benzol, bar-ammonia, etc. Deuterium which has been suggested as the name of the double-weight hydrogen suggests a new element rather than an isotope, in Prof. Wood's opinion.

Science News Letter, December 16, 1933

GENETICS

Resistance To Disease May Be Inherited

RESISTANCE to disease or susceptibility to it may be inherited. Proof of this appears in a study by Dr. Charles B. Davenport, director of the department of genetics of the Carnegie Institution of Washington.

Inefficient thyroid glands, for instance, tend to run in families, Dr. Davenport found in a study of goiter in a mountain valley of Western Maryland. While all the population there ate essentially the same food and drank essentially the same water, which was poor in iodine, the majority of the population did not have goiters, although lack of iodine is a factor causing goiter.

However, many of the people do have goiters and studies of their relationship showed that the goiters appeared only in certain families.

"One reaches the conclusion, then, that there are strains in the valley characterized by inefficient thyroids—incapable, at least, of functioning normally when there is but a very small amount of iodine in the water," Dr. Davenport said.

Science News Letter, December 16, 1933

CRIMINOLOGY

New Paraffin Test To Detect Hand That Fired Gun

THE "PARAFFIN test," a chemical means of detecting the guilty hand which fired a revolver or pistol in the commission of a crime, has been officially adopted as a standard crime detection method, it was announced at Los Angeles, by Frank Gompert, criminologist of the county sheriff's office.

Based upon chemical research, the test, according to Mr. Gompert, fundamentally consists of nothing more than the color reaction of a solution of sulfuric acid and dythenylamine to the nitrates and nitrites which are the combustion products of gunpowder.

These chemicals are deposited in very small quantities on the hand of a person who fires a revolver or pistol by the gases which escape either from the cylinder of a revolver or the ejection mechanism of an automatic pistol, Mr. Gompert says.

The test was developed independently and apparently simultaneously by Dr. Fernandez Benitez, chief legal chemist of Havana, Cuba, and Prof. Benjamin Martinez of the Department of Identification and Criminal Research, Mexico City, and was first introduced into the United States by Deputy Sheriff Ed Ayres of Los Angeles County.

Illustrating the use of the test, Mr. Gompert said:

"If a suspect is arrested either on the scene of a shooting or shortly after commission of a crime involving the use of firearms, his hands are painted with soft, melted paraffin of a bearable temperature in order to avoid placing the reagents directly on the skin and also that the resulting 'cast' may be of permanence for court and other purposes.

"After the paraffin has hardened, it is removed with tweezers, carrying with it the deposits made by the combustion gases. This cast is then treated with the solution.

"If the suspect had nitric or nitrous substances on his hands, deep purple splotches will appear on the wax and we have a positive result," says the criminologist.

"A mere positive result does not mean, however," he adds, "that we have proof that the suspect is guilty of the crime for there is no infallible road to crime detection any more than there is a royal road to learning.

MAKING THE PARAFFIN TEST

Criminologist Gompert peels hardened paraffin from the hand of Deputy Sheriff Ayres. It will be tested with a chemical solution for tell-tale purple stains.