

# SCIENCE PROVIDES EYES FOR BLIND JUSTICE TO TRAP LIARS AND PROVE TRUTH OF ALIBIS

### Professor W. M. Marston Perfects His Sphygmomanometer, Which Tells Whether Witness Is Prevaricating When Under Grill

### COURT REFUSES TO TAKE VERDICT OF INVENTION, BUT FACTS UPHOLD IT

### Constant Tests Upon Criminals and Suspects Indicate Heart Action Is Certain Barometer of Falsity of Statements

SCIENCE, which has explored many fields in the last 100 years and won scores of victories over disease and the elements, is now tackling a problem as old as history—viz., deception, or just plain, ordinary everyday lying.

Its practice, we are told, was started by old Nick himself back in the Garden of Eden. It spread like wildfire until by Jeremiah's time it had become a serious problem.

He observed bitterly that "the heart is deceitful above all things and desperately wicked; who can know it?"

Lies go hand in hand with misunderstandings and crimes of every kind. The prophets and preachers since Jeremiah have inveighed against them with all the thunder of their eloquence. Warnings of hell fire and brimstone have been shouted for centuries from every pulpit. But the habit is not yet uprooted, and science will see what it can do. It believes it is finding the way to nail a lie every time. Maybe in a few hundred years it will demonstrate the uselessness of lying to such an extent that people will not try any more, but commit it to the realm of the lost arts. And the oath may not have to be administered in the courts.

### Blood Pressure Gauged While Story Is Told

Dr. Marston found best results through measurement of what he calls helpful suggestion, and I proceeded to work with that in mind. I then had to devise some apparatus that would be useful. The earliest instrument caused some pain when it was attached to the human body, but this has been eliminated.

"Since that time considerable work has been done by me and others upon deception tests in connection with the psychological tasks undertaken for the federal government during the recent war."

An instrument, the "sphygmomanometer," popularly called "the lie detector," already has furnished some rather startling evidence of its ability to demonstrate whether a person is telling the truth or a lie.

### Science Says Confession in Murder Was False

James Frye, who had confessed a murder, was found by the machine to have confessed falsely and to have been innocent. The unusual evidence was brought forward that he had made his confession in the hope of sharing a reward, and also in the belief he would be acquitted.

Other instances are on record, some of persons who were found guilty and others who were cleared, so far as the lie detector is concerned.

It is a machine that has long been used, but applied only recently in the new way. This new application was discovered by William M. Marston, Harvard A. B., LL. B., Ph. D., who is now director of the Psychological Laboratory of American University at Washington.

"What it actually is," he says, "is an instrument to measure blood pressure. It was developed by a doctor fifty years ago and has been used since in medical practice."

Dr. Marston is a good-natured young scientist. He does not look like a man who has toiled by sunlight and candlelight for eight years over a pet theory. Observed casually, he has the appearance, though a trifle heavy, of an athlete who has spent the greater part of his time out of doors instead of in the laboratory.

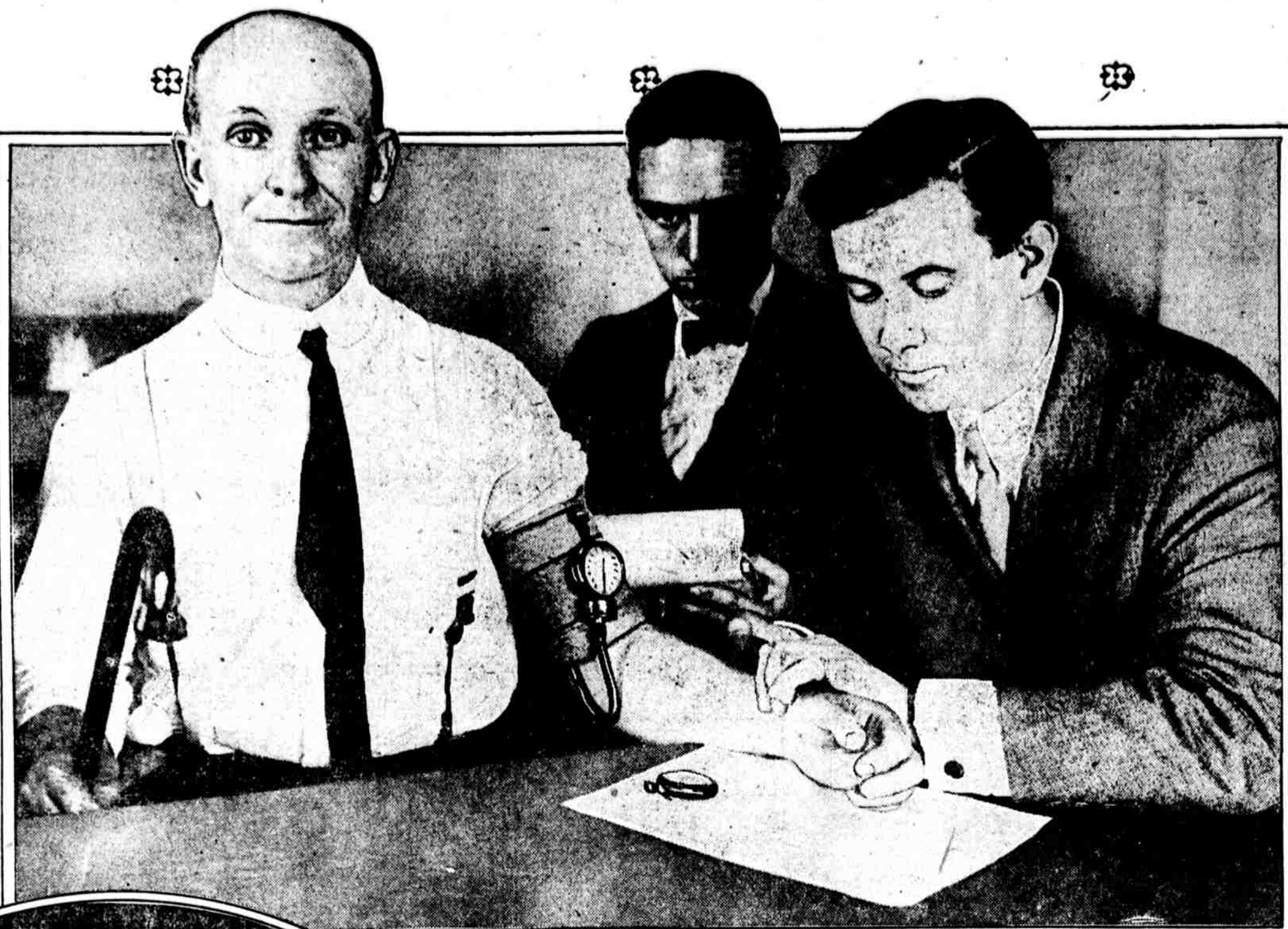
He has simply taken an old instrument, added some things to it, and applied his theory. He disclaims any pretense to having originated the sphygmomanometer.

"I have just developed the test," he said. "My position is the same as if you should take your lawn mower out in the yard and discover that it was a useful instrument with which to measure the distance between the sun and the moon. This use of the lawn mower would be your discovery."

Dr. Marston started to work on the problem of deception in 1915-14 in Harvard Psychological Laboratory under the direction of Prof. Hugo Munsterberg. Like many another scientific explorer, he was studying in a general way. The experiment was to be a series of "psycho-psychological problems in the field of legal testimony."

Quite by accident his feet landed on the trail of the lie detector.

"I was working," as Dr. Marston said, "on an association reaction time test, and I was getting some results, but nothing startling. My wife knew of my efforts to study deception and its causes. She wrote me one day telling of a woman doctor who could register deception if her hand was on the pulse of her patient. That gave me a



E. E. Dudding, president of Prisoners' Relief Society, under "lie-detector" test. The "detector" declared Dudding had been convicted unjustly, but pointed out several lies told by him which he admitted later.



The "lie detector" being used on a witness.

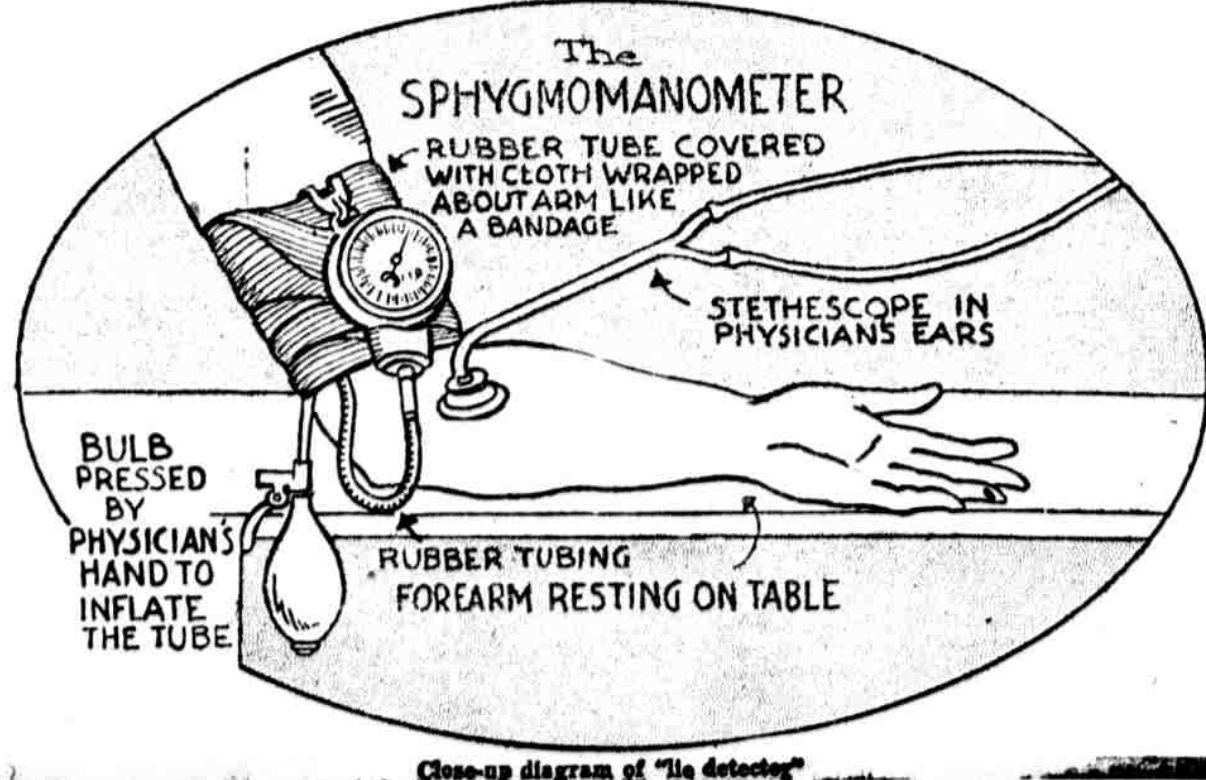
"The systolic blood pressure" of a witness while testifying.

"The systolic blood pressure test is to be regarded," he said, "as a psychologically complicated indicator of deception requiring expert knowledge and skill in its application and interpretation."

"The sphygmomanometer is attached to the subject's left arm above the elbow, the subject being seated comfortably before a table with his left arm resting on the top within easy reach of the operator, who then proceeds to take the subject's blood pressure from time to time while the witness is being cross-examined either by the blood pressure operator, or, preferably, by a second operator who may be called the examiner. The effectiveness of the test depends almost entirely upon the construction and arrangement of the cross-

### Like George Washington, It Cannot Tell a Lie

"Not that the heart beats faster," Dr. Marston explained. "It is the strength of the heart beat that counts."



Close-up diagram of "lie detector"

two general descriptions—it is in keeping with the way science undertakes to simplify matters. He calls them "positive" and "negative."

"The positive lies will be faster than they will tell the truth. That is, they talk faster. The other type slows up. That is, they take more time in answering a question or in making an 'association'—framing the lie. In other words, Dr. Marston finds a new negative type which can be faster than it can tell the truth."

### Needle Goes on Rampage When He Flirts With Truth

"The needle will fly up when the man comes to the point where he knows he is telling an untruth. It happens when he comes to what is the climax of the confession."

"You will get a register on the machine," he said. "The trouble is that you get too many reactions."

He is positive about the skill of his machine in reporting the true status of a subject's heart. All people have emotions, it seems, that are making impressions on the blood, no matter how caloused they may be in prevaricating.

"Couldn't a man be so cold-blooded?" Dr. Marston was asked, "that to tell a lie would make no difference with him and cause no change in the machine?"

"Oh, no; oh, no," he replied earnestly. "You will get a register on the machine every time. The trouble is that you get too many reactions."

### Lie Detector Is Used in Severest of Tests

Frye soon changed his mind and repudiated his confession. His lawyers did not believe him and sent for Dr. Marston. The latter examined Frye. The record of the lie detector says Frye told the truth when he said his confession was false. The deception test also proved the truth of his story as to an alibi.

It raises the interesting point, in this connection, as to whether the lie detector may ever take the place of juries. Dr. Marston emphatically declared it would not, but that it would

on the strength of the testimony of a Negro from whom a ring was alleged to have been stolen. Defendant during the six months had not made restitution, as she had been ordered. Examination was to determine whether or not she stole the ring in the first place.

B. P. judgment: Innocent. Woman telling the truth as to the ring, having been given to her.

Verification: The Judge dismissed the case, although probation officer advised six months' further probation. Now evidence had turned up indicating that the Negro who alleged that defendant stole ring was a disreputable character.

Woman, forty-six years old, arrested for sale of liquor. Admits sale of liquor this once, but says that she never did it before. This statement probation officer suspects is untrue. Also says she only drinks whisky and milk three times a day; never drinks any other sort of alcoholic beverage. Probation officer suspects this is untrue.

B. P. judgment—Lied as to only drinking milk and whisky three times a day. Probably drinks heavily when she gets liquor. As to sale of liquor, has feeling of guilt; probably knew when she sold it that it was against the law. Telling truth as to how she got the liquor and as to never having sold it before.

Verification—Medical examination

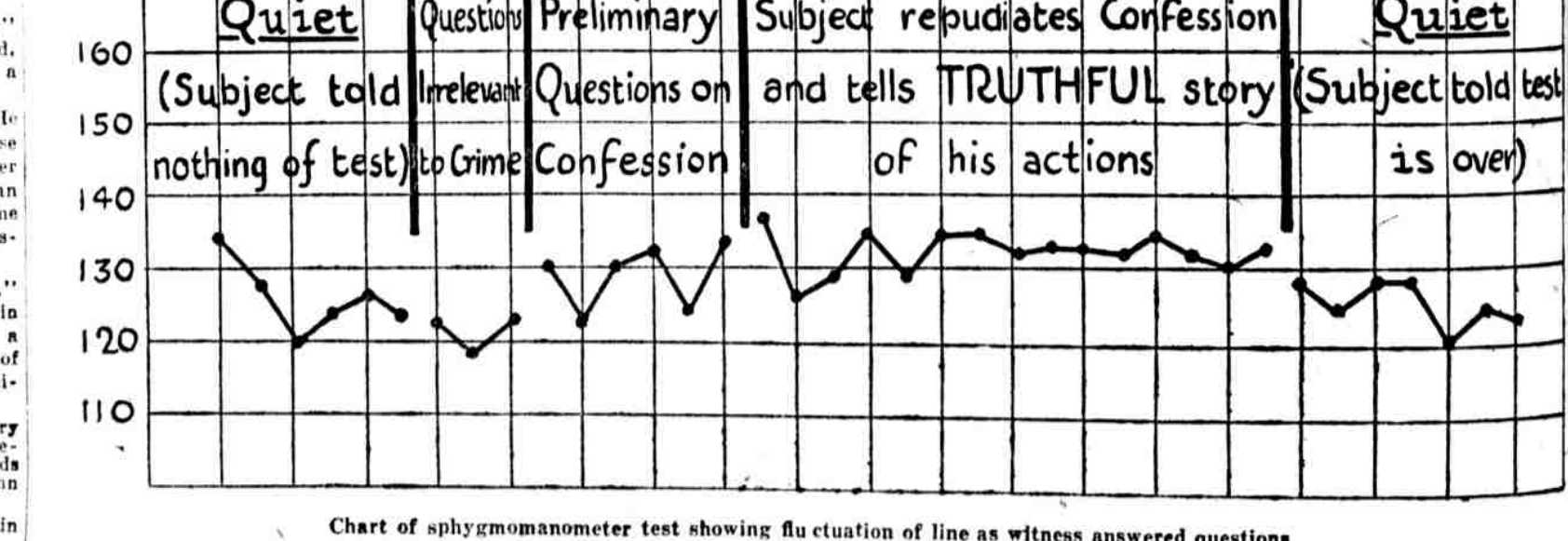


Chart of sphygmomanometer test showing fluctuation of line as witness answered questions

to him—the crucial point. When we help the juror in arriving at the truth. Here are some instances showing how the detector has exposed the truth and defended the innocent. (B. P. means blood pressure.)

Colored woman, thirty-one years of age. Arrested six months ago for larceny of a ring and placed on probation.

"A man may be a skillful liar, but he will know when he has told an untruth and there will be a wave of fear that will send his blood pressure kiting. Even a little lie is unmistakable."

In the examination of Dudding a peculiar circumstance affected the record. He is troubled with what is described as "chronic instability of the emotions." This caused the line to waver and fluctuate at frequent intervals, but there were certain places where the line shot up above all the highest points. After the examination this was shown to him. He was reminded of his answers at those points and admitted making certain misstatements relating to business matters.

The case reads like a mystery detective story. In November, 1920, a Negro physician was murdered, and the man who committed the crime escaped. A year later Frye was arrested on a forgery charge. While in jail he suddenly confessed that he was the man

### Plain or Fancy Liars Are the Same to Detector

ANGER, pain and fear are the three emotions that are watched unerringly by the "Lie Detector."

Fear of punishment or of detection flashes through the mind of the witness as he starts to tell a falsehood and the chart indicates the corresponding change in his heart beat. "It's a lie" is the report.

"Positive liars" lie faster than they tell the truth; negative liars take more time to frame their answers.

Man, 24 years old (Under indictment for 1st Degree Murder on his own Confession)

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### "Lie Detector" Picks Out Truth In Uncanny Manner

MAN confessed to murder. "Lie Detector" said confession was false. Investigation showed he had "confessed" to share a reward with detective to whom he admitted crime.

Woman accused of bootlegging said she had sold liquor only three times. "Lie Detector" said "Not so." Investigation upheld the sphygmomanometer.

Convicted denied crime for which he was convicted. "Lie Detector" upheld his denial, but said he had prevaricated as to details. He later admitted these minor lies.

Woman shoplifter said she never had stolen before. "You lie," said the detector. Investigation brought out a former criminal record.

year-old boy. Upon being told that there was a court record against her twelve-year-old boy in the Juvenile Court, she thereupon said that it was the twelve-year-old boy she referred to and that the fifteen-year-old boy was innocent. Evidence of neighbors and police tends to show that both boys have been engaged in petty thefts for years.

Man, forty-six years old. Defendant arrested for larceny. (Examiner gives no further details.)

B. P. judgment: Although defendant tells most improbable story about having found a pair of shoes in the hold of ship whereon he was working, B. P. shows his story to be truthful.

Verification: Police discovered that several other longshoremen, working on the same ship had been systematically stealing the supplies and it was further found that one of these men had taken the shoes in question, but had been obliged to drop them into the hold to avoid detection. Defendant's companions testified that he was intoxicated at the time he took the shoes and that he shouted up to the foreman in charge of the crew that he had found a pair of shoes in the elevator pit.

Dr. Marston's conclusions from these and similar tests are:

"The blood pressure deception test has demonstrable practical value in determining the truth or falsity of various elements in a witness' story, as well as in determining the general attitude of innocence or guilt in a person accused of criminal acts."

"The blood pressure deception test seems to have value as a substitute for the oath now used in court proceedings in that confessions seem to occur under the conditions of the psychological test which it had been previously impossible to extract in court or under the examination of the probation officer and police."

"By detecting guilty emotions focused upon hitherto unsuspected points of testimony the deception tests appear to open new and fruitful channels for police investigation."

### Reduction of Crime Is Seen Through Discotery

Eventually he continued, it will mean a 75 per cent improvement in the reading of the human document on the witness stand. Just as juries have been determining whether a man is sane on the testimony of experts so in the next ten years they will be relying on expert testimony of this character to show whether men are liars or not, whether they have a consciousness of evasion.

"As to the other ramifications of the deception test, it will lead, of course, to reduction of crime very considerably. The deception test will turn up class the test will show when suspects are lying on certain points. It simply puts the state of his mind on a sheet of paper to be read."

"Insurance companies and com-

mission boards are showing great interest in the test. It will prove useful to them getting accuracy at a preliminary state of facts, and as to 'fingerling'."

There is a movement to have the test adopted by the Department of Justice. William J. Burns is greatly interested. A group of psychologists, a result of tests by the National Research Council advised its introduction in the department, the Judge Advocate General's office and the Military Intelligence division. U. S. A.; Walter H. Scott, president Northwestern University; Dr. James R. Angell, president Yale University; Dr. Edward L. Thorndike, Columbia University, and Dr. Herbert Sydney Langford, director Harvard Psychological Laboratory, with United States, dean of the legal side the work was actively endorsed and assisted by John H. Wigmore, probably the most eminent authority on evidence in the United States, dean of Northwestern University Law School; Richard Hale, of the Boston bar, and other prominent members of bench and bar.

Just now there is being organized in Washington the American Psychological Society. Efforts will be made to get legislation for the establishment of the first move of a Bureau of Research in the Department of Justice.