additional colleges to the program in September.

More 17-year olds will be selected for scholarships by the next qualifying test to be given early in November. Designated as the Army Specialized Training Reserve Program, the plan will provide a continuous flow of specially qualified young men before they enter active military duty.

Three 12-week terms are scheduled, including studies in sciences, English, history, geography and mathematics. At the end of the term in which the trainee reaches his 18th birthday, he will be placed on active military duty. After completing his basic training he will be screened for continuation in the Army specialized training program.

Science News Letter, August 21, 1943

MAKING NEW NICKEL—The photographs on this and the facing page show how that nickel in your pocket was made at the U. S. Mint in Philadelphia. First an artist makes the design in plaster about seven times the size of the finished coin. A negative cast is made from this original and this is copper plated (left) in an electrolytic bath. From the copper plate, a transfer engraving is made on a three-dimensional pantograph (center). The copper plate is then preserved carefully so that it may later be copied as many times as necessary. The transfer engraving first made by pantograph is about half the size of the original and is called an "intermediate." It must be touched up, smoothed and corrected (right).

RADIO

New Radio Station

Ticks, hums and whistles will constitute only broadcasts from the National Bureau of Standards more powerful station.

➤ A NEW, more powerful radio station has been opened by the National Bureau of Standards. No one will be able to tune in for entertaining programs, however, for its broadcasts are limited to ticks, hums and whistles which set the frequency standards for technical men in many industries.

The service has now been extended so that good reception is possible throughout the United States, the North Atlantic Ocean and, with fair reception, over most of the world. Broadcasts will be continuous night and day on five, ten and fifteen thousand kilocycles.

The radio and audio frequencies serve as standards used by radio engineers of the armed forces, commercial stations, and radio industry. It is by the National Bureau of Standards broadcasts that a station periodically checks to make sure that broadcasts are on the frequency prescribed by law and that the programs will come in where the listener expects them to be.

One of the audio frequencies used, 440 cycles per second, is the standard musical pitch corresponding to A above middle C. It is used by all musical instrument manufacturers, and many piano technicians and musicians. The broadcasts are helping to set up a uniform standard; for there has been some difference of opinion as to what the tone A really is.

Besides these frequencies there is a pulse every second heard as a faint tick when listening to the broadcast. These may be used as accurate time signals and their one-second spacing permits scientists to make accurate physical measurements.

Science News Letter, August 21, 1943

PSYCHOLOGY

Three Persons Out of Four Don't Know Themselves

➤ DO YOU know yourself?

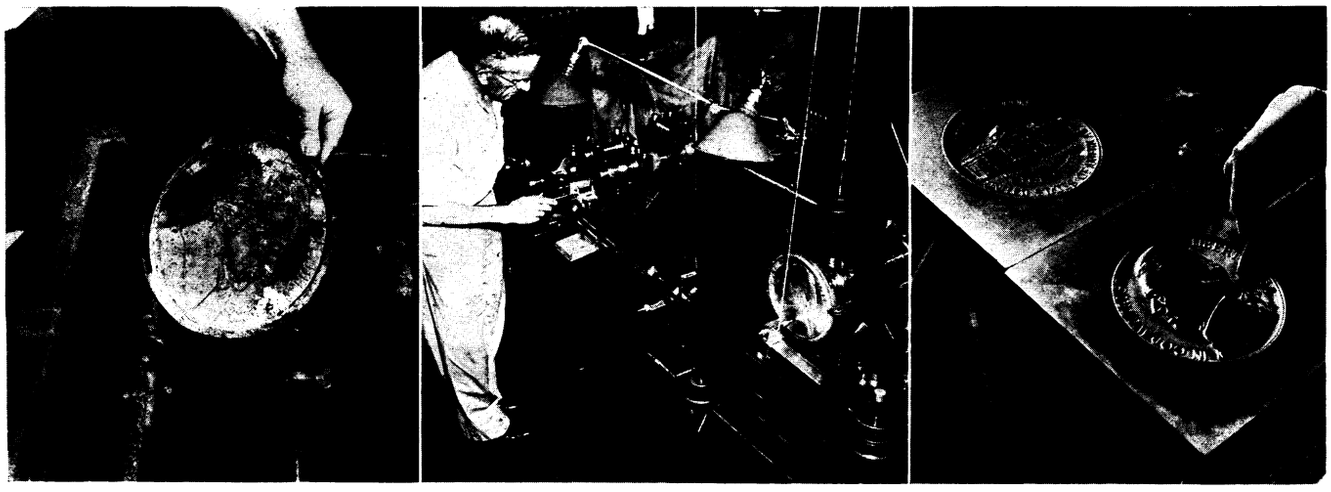
If you can recognize your own hands when seen in a photograph, your own handwriting, the silhouette of your own profile, you know yourself better than three-fourths of the persons tested by Dr. Werner Wolff, chairman of the department of psychology at Bard College, Columbia University, in an 18-year study of personality.

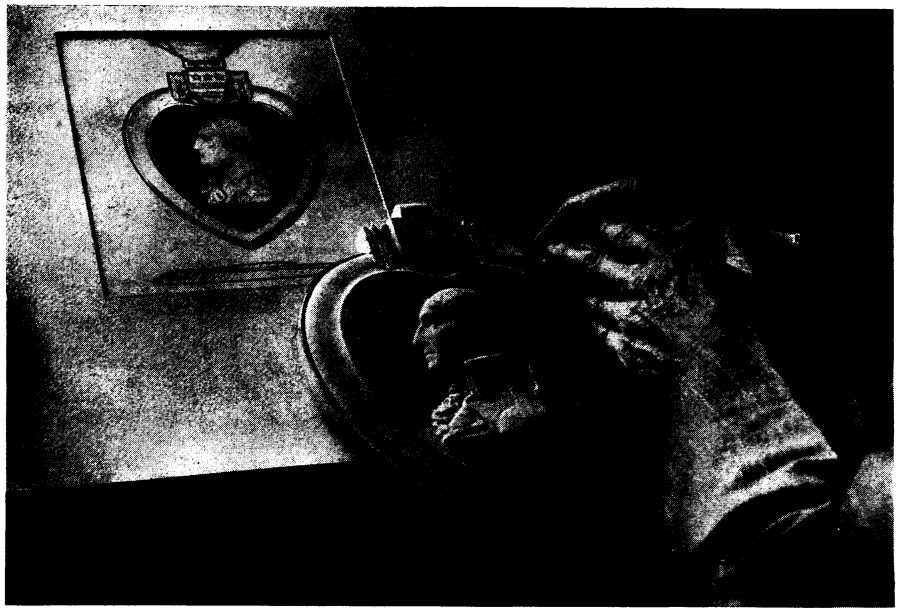
If you can recognize your own voice, you are one person in ten.

This failure of individuals to recognize themselves, Dr. Wolff, in an interview, attributed to an unconscious unwillingness to remember or realize what he is like.

"Man's own image," he said, "is for him taboo. He forgets it. If we show it to him he reacts with emotion."

Yet, surprisingly enough, although men seldom have a chance to observe





PURPLE HEART—This is the plaster cast from which are made the purple heart medals being awarded to our military heroes who are wounded in battle. Up to the point of making the dies, the process of making the medals is practically the same as that shown photographically on this and the facing page for the making of the nickel. Like the nickel, the medal is made at the U. S. Mint in Philadelphia. The cast for a new medal, awarded for heroism in non-combat areas, is shown on the front cover of this week's SCIENCE NEWS LETTER. All these photographs are by Fremont Davis, Science Service staff photographer.

their own gait, they are able to recognize their walk with 100% accuracy.

It occurred to Dr. Wolff that, by asking those persons who failed to recognize their own handwriting and other forms of expression to judge the character revealed there, it might be possible to get at a man's very private opinion of himself.

The interpretation made in this way of a man's own unrecognized expressions agree very well, Dr. Wolff found, with those by other people about him. But he is much more extreme in his judgments.

"If the majority say he is intelligent," Dr. Wolff explained, "he will describe himself as a genius. If the majority say he is unstable, he will describe himself as a neurotic character."

This study of personality is an attempt, Dr. Wolff explains, to develop a way of exploring the depth of personality, or the unconscious, by a method other than psychoanalysis. The objection to psychoanalysis, he says, is that it does not permit experimental proof—a drawback confessed by Prof. Freud himself.

An amusing personal incident suggested to Dr. Wolff his study of man's failure to recognize himself. It is described in his new book, *The Expression of Personality,* just published by Harper, in which he gives details of his long research.

"I went to a tailor to buy a suit," Dr. Wolff writes. "I opened the door of a dressing room but withdrew because a man was in the room. When I told this to the tailor he was astonished, because no one else was there. He went to the dressing room and it was empty, but in the background was a big mirror. The man in the dressing room had been myself, reflected by the mirror."

Science News Letter, August 21, 1943

MINTING—The intermediate (see facing page) is placed on the pantograph to make another transfer engraving in steel the same size as the final nickel. After hardening by heat treatment, the steel engraving is put in a large hydraulic press (center) and many negative dies are stamped from it (left). Separate dies are made for the "head" and "tail" of the coin. These are placed in the coining machine (right). Blank pieces of metal (which is not nickel any more) are fed into the machine and come out good five-cent pieces.