

Another field for the amateur without a telescope is in watching for "new stars" or novae, as the astronomer calls them, which suddenly flash out from previous obscurity. R. Watson, an amateur astronomer in South Africa, has discovered two of these, Mr. Campbell stated, while Rev. T. D. Anderson, an amateur in Edinburgh, Scotland, has discovered three. "Since most of the novae occur near the Milky Way," said Mr. Campbell, "it might be well worth while for the amateur to familiarize himself with the constellations in which this well known band of stars lies."

Interesting and important as these endeavors are, the chief work of the amateur can be accomplished with the aid of a small telescope. Occasionally as was the case recently with Leslie C. Peltier, an amateur of Delphos, Ohio, he may find a new comet, which will bring him fame, and, if he is the first to see it, the comet will be named after him. The late Dr. Joel H. Metcalf, a Unitarian minister of Winchester, Mass., discovered six, while the late Wm. R. Brooks, of Geneva, N.Y. found a dozen in twenty years, Mr. Campbell said.

However, the most valuable work of the amateur, in the opinion of Mr. Campbell, is in observing variable stars, which more or less regularly diminish in brightness, only to flash out again as bright as before. The American Association of Variable Star Observers numbers over 300 members, and in the past fourteen years they have accumulated more than 200,000 observations on about 500 of these stars. "So completely is this work being carried on that the professional astronomers rely almost entirely on the results of such variable star observers for the fundamental data necessary to a better understanding of the cause underlying the variations of these stars," it was said by the speaker, who concluded by requesting still more cooperation between the laymen and the astronomers.

BRIGHT BRAINS GROW UNTIL TWENTY

If intelligence was a visible part of human anatomy, like height, so that it could be seen and measured with a tapeline, we could easily observe that the average individual stops growing at around the age of fifteen, but that the brighter child continues to shoot up head and shoulders above the crowd, until he is twenty years old, or perhaps older.

Evidence along this line, showing that all minds, like all bodies, do not stop growing at the same age, but that some continue to grow much longer was presented by Dr. L. L. Thurstone, of the University of Chicago, before the American Psychological Association recently.

"During the war it was possible to compare the brightness of men of different age groups by means of the army psychological tests," said Dr. Thurstone. "The tests indicated that intelligence does not increase in adult age. Men thirty years old did not do much better in the tests than men twenty-one years old. Experiments to determine the point at which adult intelligence is reached placed the age level of so-called adult intelligence in the vicinity of fourteen or fifteen years.

By a new method of measurement, a study has been made of 3,000 London children, three to fourteen years old, and a study of 10,000 American children from eight to nineteen years. Results show that brightness increases as far as the study has been carried, that is, up to twenty years."

It still remains a fact that the average brightness of the adult population as measured by psychological tests, is no higher than that found among school children in the teens, Dr. Thurstone pointed out. "But bright children," he said, "undoubtedly continue to grow in intelligence beyond the conventional so-called adult level of fifteen!"

SOLVING THE RIDDLE OF INSULIN

Insulin, the extract from the pancreatic gland, that was first prepared by Banting and Best at the University of Toronto three years ago and since used extensively in the treatment of diabetes, may soon be made by synthesis in the chemical laboratory, according to a statement by Prof. Treat B. Johnson of Yale University at the American Chemical Society meeting recently.

Prof. John J. Abel of Johns Hopkins University, who has been studying the structure of the natural insulin, has come to the conclusion that it is an "auto-oxidizable sulphur compound, probably of the thio-peptide type." This means that it is an unstable substance similar to ordinary albumin in composition but simpler in structure. Prof. Johnson announced that research has been started in the Yale laboratories on the structure and reactions of this kind of compound in the hope that it may lead to a method of making it artificially, or to the discovery of a substitute of value in medical science.

Insulin belongs to the class of secretions of the ductless glands, known as "hormones", which in minute amount circulate through the blood and control bodily processes. Insulin is the hormone that regulates the utilization of sugar from which the muscles obtain their energy. In diabetics it is lacking but may be supplied by injections of the prepared insulin.

SUN BURN RAYS OF SUN GROWING STRONGER

The ultra-violet radiation of the sun, invisible rays of too short wavelength to be seen, but which are responsible for tanning people's skins and which also affect photographic films, is increasing with the rise in the number of sun spots. This is the conclusion of Dr. Edison Pettit, astronomer at the Mt. Wilson Observatory, in a paper read before a recent meeting of the American Astronomical Society.

Dr. Pettit's studies have been concerned with the ultra-violet waves about one-seventy-five-thousandth of an inch long, just a little shorter than the deepest violet rays visible to the eye, which are about one-sixty-five-thousandth of an inch in length. As glass absorbs the ultra-violet rays, it has been necessary to use quartz lenses, and the amount of radiation is measured by means of a thermocouple, a device which gives a minute current when light, either visible or invisible falls on it, the exact current being measured by means of a delicate galvanometer.

The method used has been to compare the ultra-violet radiation which passes through the quartz lenses and a thin film of silver, with green light passed through similar lenses, a green celluloid filter and a thin layer of gold, a series of measurements being made, first of the ultra-violet and then of the visible green light. The whole apparatus is attached to one of the observatory's