as important as facts about stones, plants and animals; yet there is, perhaps, the least definite knowledge about man. The scientific study of man in an experimental way is in its beginning. A man should *investigate* fifty times as much as he *writes*, and not *vice versa*.

Breathing.—Experiments with Ludwig's kymographion, the pneumograph and the Cambridge tambour, as made by Dr. MacDonald on four school children and three adults, seemed to indicate that concentration of mind or emotion lessens breathing. The effect between pathetic and lively music is noticeable.

Circulation.—In a somewhat extended experiment on a reporter with his newly constructed plethysmograph Dr. MacDonald found that: (1) By applying the algometer to the temporal muscle there was a decrease of flow of blood in the arm. (2) By passing a galvanic current through the brain, causing a pain like the prick of a pin, the effect was a decrease of flow of blood in the arm.

Fatigue.—By experiments on two women and two men with Mosso's Ergograph the results of Lombard were confirmed, to wit, that the recovery of the power of the finger after fatigue owes its periodicity to fatigue.

Dr. MacDonald illustrated with instruments of his own and those of others quantitative measurements of sensibilities of smell, heat, locality, pain and muscular judgments.

The second paper was by Dr. Thos. Wilson on 'Marriage in Nature and in Law.'

J. H. McCORMICK,
General Secretary.

ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, APRIL 7, 1896.

THE Mineralogical and Geological Section having precedence, M. Jos. Willcox described the process of obtaining quartz from the Oriskany sandstone of Pennsylvania to be used in the manufacture of glass. Mr. Keeley stated that the bed used for the purpose extends southward through Bedford county, where the material can be used without crushing, as it crumbles when exposed to the air.

Prof. Carter suggested the use of stone from the Conshohocken quarries as a source of silica. When dissolved in hydrochloric acid the stone

yields flattened, transparent grains of silica, not at all colored by iron. The percentage of mica is small, the glistening appearance of the rock being due to the presence of silica.

Mr. Geo. Vaux, Jr., called attention to recent additions to the William S. Vaux collection, which included superb crystals of calcite from the Joplin region, Missouri. They occur in caves opened for the working of lead and zinc. The several mines are characterized by distinct forms of the mineral. The sphalerite which is largely present is being desited at the present time, the handles of shovels and picks left in the mines being covered with crystals. Unfortunately these had all been thrown into the reducing furnace and destroyed.

Mr. Theodore D. Rand described a fine collection of polished serpentines presented by him to the Academy from numerous localities in southeastern Pennsylvania. They belong to two groups: one bordering the ancient gneiss, the other, and the more recent, occurring in the mica-schists and gneisses. The former are altered igneous rocks, either chrysotitic or pyroxenic, the chief material being enstatite. The sources of the several forms were traced.

Dr. Florence Bascom reported the microscopic examination of thin sections of serpentine from the Black Rocks of Lower Merion. The mineral from this locality has been derived from crysolite. That from the Conshohocken dyke is composed of diabase having the feldspar crystals in the lath-like form characteristic of that rock.

It was announced that Mr. G. Frederic Russell, accompanied by Dr. Querch and a taxidermist, had started from Georgetown, British Guiana, March 11th, on a collecting tour in the interior for the benefit of the Academy.

EDWARD J. NOLAN,
Recording Secretary.

NEW YORK ACADEMY OF SCIENCES, SECTION OF ASTRONOMY AND PHYSICS.

At the regular meeting, held on April 6, 1896, the following program was presented before the section, Prof. J. K. Rees presiding:

The first paper was by Mr. P. H. Dudley, on the following title: 'The Law of Deflection Sets Under Drop Tests in Different Sections of