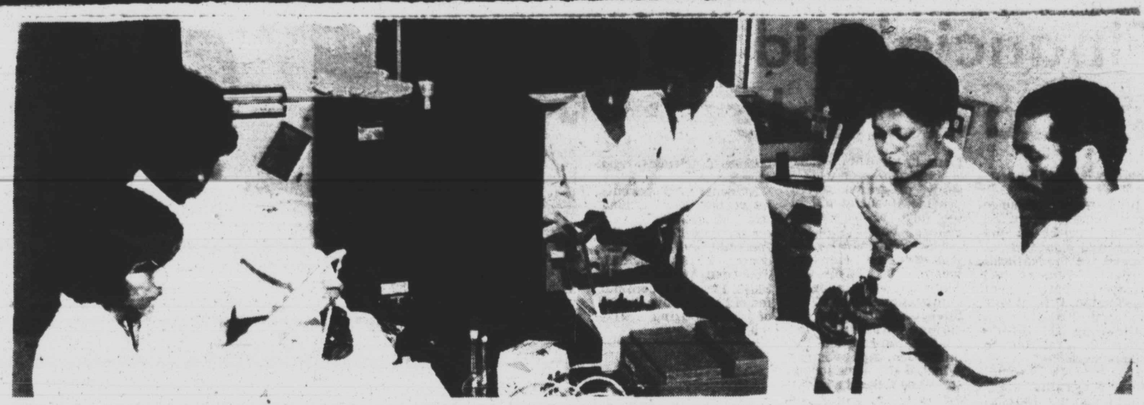

WORKING in the laboratory is a major part of student activity. A group of Ph.D. students at Meharry's School of Graduate Studies and Research conduct laboratory investigations in the Department of Biochemistry and Nutrition.

Medical laboratory workers perform a needed service

Laboratory tests play an important part in the detection, diagnosis, and treatment of many diseases.

Medical laboratory workers, often called clinical laboratory workers, include three levels: medical technologists, technicians, and assistants.

They perform tests under the general direction of pathologists (physicians who diagnose the causes and nature of disease) and other physicians, or scientists, who specialize in clinical chemistry, microbiology, or the other biological sciences.

Medical laboratory workers analyze the blood, tissues, and fluids in the human body by using precision instruments such as microscopes and automatic analyzers.

Medical technologists, who require four years of postsecondary training, perform complicated chemical, microscopic, and bacteriological tests.

These may include chemical tests to determine, for example, the blood cholesterol level, or microscopic examination of the blood to detect the presence of diseases such as leukemia.

Technologists microscopically examine other body fluids; make cultures of body fluid or tissue samples to

(Continued on Page 15)

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—Medical laboratory

(Continued from Page 14)

determine the presence of bacteria, parasites, or other microorganisms; and analyze the samples for chemical content or reaction.

They also may type and cross-match blood samples.

Technologists in small laboratories often perform many types of tests. Those in large laboratories usually specilaize in areas such as microbiology, parasitology, biochemistry, blood banking, hematology (the study of blood cells), and nuclear medical technology (the use of radioactive isotopes to help detect diseases.)

Most medical technologists conduct tests related to the examination and treatment of patients and are called on to display independent judgement.

Some do research, develop laboratory techniques, teach, or perform administrative duties.

Medical laboratory technicians, who generally require 2 years of postsecondary training, perform a wide range of tests and laboratory procedures that require a high level of skill but not the in-depth knowledge of highly trained technologists.

Like technologists, they may work in several areas or specialize in one field.

Medical laboratory assistants, who generally have a year of formal training, assist medical technologists and technicians in routine tests and related work that can be learned in a relatively short time.

In large laboratories, they may concentrate in one area of work.

For example, they may identify abnormal blood cells on slides. In addition to performing routine tests, assistants may store and label plasma; clean and sterilize laboratory equipment, glassware, and instruments; prepare solutions following standard laboratory formulas and procedures; keep records of tests; and identify specimens.

About 240,000 persons work as medical laboratory workers. Most medical laboratory personnel work in hospital laboratories.

Others work in independent laboratories, physicians' offices, clinics, public health agencies, pharmaceutical firms, and research institutions. These places are concentrated in larger cities and populous States.

Veterans Administration hospitals and laboratories employ about 2,400 medical technologists and about 2,000 medical laboratory technicians and assistants. Others work for the Armed Forces and the U.S. Public Health Service.

The minimum educational requirement for a beginning job as a medical technologist usually is four years of college training including completion of a specialized training program in medical technology.

Undergraduate work includes courses in chemistry, biological sciences, and mathematics.

These studies give the technologist a braod understanding of the scientific principles underlying laboratory work. Specialized training usually requires 12 months of study and includes extensive laboratory work.

In 1976, about 700 hospitals and schools offered programs accredited by the American Medical Association.

These programs were affiliated with colleges and universities; a bachelor's degree usually is awarded upon completion. A few programs require a bachelor's degree for entry.

Many universities also offer advanced degrees in medical technology and related subjects for technologists who plan to specialize in a certain area of laboratory work in or in teaching, administration, or research.

After successful completion of the appropriate examinations, medical technologists may be certified as Medical Technologists, MT (ASCP), by the Board of Registry of the American Society of Clinical Pathologists; Medical Technologists, MT, by the American Medical Technologists; or Registered Medical Technologists, RMT, by the International Soceity of Clinical Laboratory Technology.

These organizations also certify technicians. Laboratory assistants are certifed by the American Soceity of Clinical Pathologists.

Medical technologists and technicians must be licensed in Alabama, California, Florida, Georgia, Hawaii, Illinois, Nevada, Pennsylvania, Tennessee, New York City, and Puerto Rico. Requirements for licensure include a written examination in some States.

Persons interested in medical laboratory careers should use coseiderable care in selecting a training orogram.

Accuracy, dependability, and the ability to work under pressure are important personal characteristics for a medical laboratory worker. Manual dexterity and normal color vision are highly desirable.

Technologists may advance to supervisory positions in certain areas of laboratory work, or, after several years' experience, to administrative medical technologist in a large hospital.

Graduate education in one of the biological sciences, chemistry, management, and education usually speeds advancement. Technicians can advance to technologists by getting additional education and experience.

Similarly, assistants can become technicians by acquiring more education and experience.

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