Plans for State Diagnostic Laboratory

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Everyone here at the Iowa State College, Division of Veterinary Medicine is anxiously watching the construction progress of the new Iowa State Veterinary Medical Diagnostic Laboratory. After much effort on the part of the administrative staff, faculty, architects and many others, they are finally seeing their dream come true as workmen pour the concrete for the ground floor here this spring. This step forward was made possible when the 55th General Assembly met in 1953 and appropriated $600,000 for the construction of a new laboratory. This allocation is to also facilitate the remodeling of the present buildings housing the Departments of Anatomy, Pathology and Hygiene.

The new laboratory will provided much needed space as offices for the staff and more working space, required for handling an increased number of specimens. At the present time there are four veterinarians, three technicians and two stenographers employed by the diagnostic laboratory. At the present time people are working in the same space occupied by the laboratory in 1928. The number of specimens has increased from 8,633 in 1928 to 389,139 in 1954. In addition to the crowded conditions centering on the diagnostic laboratory equally serious situations exist in this building which also houses the departments of pathology and hygiene. Neither of the departments can function properly in their undergraduate teaching, graduate teaching or research programs. Both of these departments have grown in recent years in order to provide instruction for undergraduate students. There is no space where graduate students may be trained to serve as replacements and additions to a rapidly growing profession.

The site for this new building was selected so that pathology and hygiene could become an integral part of the diagnostic laboratory. This will provide a very efficient unit for the diagnosis of livestock diseases.

Many features of the new building will assist considerably to increase work efficiency and effectiveness. All of the present equipment will be transferred to the new laboratory including post-mortem tables, pathology laboratory tables, centrifuges, refrigeration units and many other items.

A few of the features of the new diagnostic laboratory include a refrigeration room for holding carcasses, if necessary, prior to necropsy. This facility will enable practitioners to bring specimens to the laboratory at any time. It will also aid in preserving specimens in good condition for later use in undergraduate instruction.
Better facilities will be available to use experimental animals for diagnostic purposes. Certain steps will be taken to minimize transmission of pathogens within the isolation rooms and laboratory. Several separate ventilating systems are to be installed. Inoculation booths, with individual exhaust fans, will reduce the hazards of spreading infectious agents to other personnel. The exhaust fans are expected to help prevent culture contamination, thus rendering bacteriological work much less laborious and time consuming. Each exhaust outlet will be equipped with dual electrical filters to decontaminate the air passing to the outside.

The brucellosis testing laboratory will benefit considerably by the new building. It will be provided with a new office, laboratory and preparation room. At present these services are provided in a crowded laboratory and hallway under the administration building. Last year 384,608 samples were processed, excelling the previous high year of 1941 by over 100,000 samples. With the current increase in swine brucellosis, along with the continued number of bovine specimens, the number of samples is expected to rise significantly during the next few years.

Three new services will be provided. These include pullorum disease testing, leptospirosis testing and chemical toxicology. The load of pullorum testing has previously been carried entirely by the practitioners. In many cases these veterinarians don't possess satisfactory equipment to provide this service. No leptospirosis testing has been done by the diagnostic laboratory, however an increased demand for this service has been noted in recent years. It is also expected that a full time chemical toxicologist will be employed. At present, chemical samples must be sent to the state chemist in Des Moines for analysis. This has very often proven inconvenient and time consuming.

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Increased working space will also make possible the hiring of more specialized technicians of virology and bacteriology. At present the person who performs the necropsy on an animal must then continue with the virology or bacteriological work often required to establish a positive diagnosis. This task leads to considerable confusion and lost time in a crowded laboratory.

The Department of Veterinary Pathology will benefit in four respects when the new building is completed. A corridor, connecting the old building with the new, will pass through the center of the present student laboratory (Room 114). Hence the northeast room, on the main floor of the new building, will be used as the student laboratory for pathology-parasitology. This laboratory will measure 41 feet by 38 feet, accommodating a section of 36 undergraduate and graduate students. Secondly, the five basement rooms, to be vacated by the diagnostic laboratory, will provide much needed space for staff and graduate student research. Thirdly, a basement room (Room 16) vacated by the hygiene department, will allow additional space for our valuable collection of pathologic and parasitologic material; also will provide more room for histopathologic technique. Fourthly, office space will at last be available for each member of the present staff.

The Department of Veterinary Hygiene, which will integrate its work closely with that of the diagnostic laboratory, is to benefit by the addition of a new student laboratory and a lecture room. The laboratory is to be located on the second floor in the north-west corner of the new building and the lecture room will be in the east end of the second floor. An experimental animal room, adjacent to the laboratory room, will serve as housing for the inoculated animals. The additional space will probably enable the re-scheduling of classes to three hour laboratory periods instead of the present two hour period. At the present time, one laboratory must be shared by pathology, bacteriology and parasitology. This will enable earlier preparation of materials for instruction purposes. In the past, one set of laboratory specimens and equipment had to removed and others set up for the next instruction period in ten minutes.

Other added conveniences include an intercommunication system, a penthouse type water still with gravity flow to laboratories. Locker rooms for both men and women will be provided. A dark-room will be constructed in the basement of the anatomy wing. The north portion of the ground floor will be used for equipment repair. This is expected to speed repair work as well as to decrease repair costs.

The old clinic building which houses the Department of Veterinary Anatomy is to undergo extensive remodeling. Much of the first floor has rough flooring which makes cleaning quite difficult. This will be overlayed with smooth concrete. A drop ceiling is to be installed throughout the entire first floor primarily to control odors and heat. These odors previously infiltrated the rooms through wall ventilators from the basement. The new ceiling is to be placed below the ventilators so the odors may then be eliminated by vents in the top of the building.

Since the present room used for histology will be turned into a diagnostic laboratory animal room, histology will be moved to the south-east corner of the old clinic building. This space was formerly used as the clinics' animal treatment room. Drs. Bennett and Packer are currently using this section for experimental animals. New lighting will be installed. Students will be seated facing north for lecturing purposes. This new histology laboratory should accommodate approximately one hundred students.

Sculpturing, under the direction of Christian Peterson, is to be moved from the building to make way for a dry specimen museum. The wet specimen museum will remain in its' present site. Two small rooms adjacent to the sculpturing laboratory will house the equine, porcine, canine and bovine skeletons for student group or individual study.

On the second floor of the anatomy building, the two rooms formerly occupied by the I.S.C. Veterinarian will be equip-
ped for histological research. These two rooms are in the south-west corner. Just north of these two rooms is the old hay loft, which will be converted to a laboratory for anatomical research.

Several improvements are scheduled for the basement of the anatomy building, some of which are currently underway. The students are to have shower facilities available and Dr. Browne's workshop will be converted into much needed locker space. Staff lockers and showers are to occupy the extreme south-west corner of the building.

A very unique system has been devised for the preparation and movement of large animals used for dissection. An old two-car basement garage, adjacent to the west of the anatomy building, is currently being converted to serve as a preparation room for large animals. Overhead tracks will then carry these prepared specimens into a walk-in cooler. The cooler will occupy the two south-west corner "dog-rooms". As needed, the prepared specimens may be moved by elevator to the dissecting laboratory. Here an overhead railway has been devised with ten shunts to facilitate the movement of these heavy animals to the desired sites. This will eliminate the necessity of handling these heavy specimens by brute strength, plus eliminating the need of the freshmen wasting one or two laboratory periods per quarter to move the specimens.

The new diagnostic laboratory is to be of brick construction with two wide bands of windows to the north. Corridors and floors will have asphalt tile. Each hall, office and laboratory is to be painted a different color to provide a pleasant atmosphere in which to work. Laboratory tables will be of birch construction with acid proof tops. Stainless steel tables and equipment will be utilized where tissues will be handled. The laboratory is expected to be ready for use by the summer of 1956.

Semen Collection by Electrical Stimulation

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Frequently bulls are encountered that refuse or are unable to serve a female or an artificial vagina. Massage of the internal genitalia has been found to be an unsatisfactory way of obtaining semen. Semen collection by electroejaculation has been demonstrated in rams, boars and bulls. Failure of a young Guernsey bull at the Iowa State College Dairy Farm to serve a female or an artificial vagina