

completely in heavy muslin covers which can be opened on the front side and need not be changed until worn out. Fully loaded and covered, the shelves can be rolled off their trucks into a sterilizer. To change the covers, the shelves will be raised on hooks installed in Central Supply; the old cover peeled off; a new one fitted on; and the shelves replaced on their



**DR. DERYL HART.** Appointed to the chair of surgery in March 1929, Dr. Hart was a member of the original faculty of Duke Medical School. He is an alumnus of Emory University and of Johns Hopkins School of Medicine. Dr. and Mrs. Hart have six children, one of whom, Elizabeth Hart King, will be graduated from Duke Medical School in June.

truck. When ready for use these shelves will contain all of the sterile instruments and material need for the operations in the 18 operating rooms. The instruments will be in three units: a work tray, a basic set used in all operations, and a specialty set for that particular operation. All fixed wall shelves for reserve supplies in the Preparation Area have been built high enough to allow tables to be stored underneath.

**Clean-Up Area.** The operation completed, all materials and instruments are placed on the supply table and returned to this room for cleaning or disposal. Two persons can staff this area which provides both for the

clean-up and for stacking of instruments for later operations. Two types of techniques are used: one for "clean" operations and one for operations involving infected material. When a table comes back from a clean operation, gloves, syringes, basins and the like are stacked on rolling shelves to be sent down by elevator to Central Supply for cleaning. Linen is put down the linen chute. Instruments are put to soak and rinsed off. With all joints open, they are stacked in wire mesh baskets and put in the ultrasonic instrument cleaner. This machine produces 18,000 vibrations per second in the detergent solution in which the instruments are cleaned, and can do a thorough cleaning job in three to five minutes. The instruments then go through a rinser and dryer; their joints are closed; and they are stacked in trays to be sterilized and returned to the Preparation Area.

Following an operation on a patient with an infection, the linen and supplies which are contaminated, together with the instruments, are placed in a rolling, stainless steel container fitted with a valve in the bottom. This container is rolled to the clean-up area and into a special sterilizer, designed through the combined efforts of the Duke Department of Surgery and the American Sterilizer Company. This sterilizer is equipped with a drainage valve opening directly into a sewer line and with a powerful cold water spray. When the container is rolled into the sterilizer, the valve on the bottom of the container opens automatically and the door is closed. The cold water spray is turned on, and the infected linens and instruments are soaked and drained inside the sealed sterilizer. After soaking, they are sterilized and cooled, and then processed in the same manner as material used in clean operations.

**Operating Area.** The new operating rooms are finished with wall tile in a soft grey-green. The new cor-



**Dr. K. Takeshima,** Duke Hospital anesthetist, administers nitrous oxide, an analgesic or pain-blocking gas. Earlier, the patient had gone to sleep under the influence of another drug.

ridors and anesthesia rooms are paneled with stainless steel to eliminate scarring. As collateral equipment for surgery (such as the heart-lung machine or the blood heat exchanger) becomes more complicated, the operating team may number as many as ten or twelve persons. To accommodate this personnel and equipment, the new operating rooms are larger than the old. Above each operating room is a visitors' gallery equipped with microphones for two-way conversation. The microphones can be silenced and the gallery darkened from the operating room. The visitors' galleries, separated from the operating rooms by glass, are on a separate air conditioning system to reduce pollution of the air in the operating rooms. All electrical outlets including the X-ray view boxes are equipped with explosion proof switches or connections. Conductive flooring discharges static electric current from all equipment and from all individuals who must wear shoes with conductive soles. Water temperature in scrub basins is thermostatically controlled. An explosion proof heating unit heats solutions when necessary. Ultra-violet lights to purify the air are shaded to protect the eyes from glare which can produce

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