IN THE LABORATORY

A laboratory is equipped with a variety of apparatus, devices and amenities. There is usually a working table or bench there with a sink and running water, gas and electricity mains. The necessary assortment of laboratory glassware includes test-tubes, beakers, flasks of different shapes and sizes, bottles, jars, cylinders, funnels, pipettes, burettes, watch-glasses. Dishes, basins, crucibles, grinding mortars with pestles and stirrers are usually made of porcelain. Plastic materials find good use in laboratories, too, as many of them are chemically resistant, acid- or alkali-proof and unbreakable. Other equipment includes desiccators, ovens, furnaces or kilns for generating high temperature, centrifuges, thermostats, balances (simple or analytical), reflux condensers, water-baths, oil- or sand-baths, distilling flasks, a filter pump, optical or electron microscopes, etc. The various parts of an apparatus are fitted together by means of glass tubing, using corks or rubber or glass stoppers. A Bunsen burner, with or without a wire gauze, will often do to obtain the temperature required for the reaction. A balance for weighing out solids in quantitative work consists of two balance-pans, one for the material to be placed on, the other for the weights. Liquids are measured out in measuring cylinders, burettes or graduated flasks.

The most important equipment of any histological laboratory is the light microscope, It consists of the eye-piece (ocular), the body-tube and a set of usually three objectives screwed into a revolving nose-piece. The lens of an objective has a specific resolving power, i.e. a capacity to distinguish between two adjacent points. The material to be observed is put on a slide which is held in position on the stage by clips, unless the microscope has a built-in mechanical stage. The sub-stage consists of a condenser, iris diaphragm and mirror. The standard light microscope has a magnifying power of 1,000 diameters. A laboratory worker has to follow certain fairly standard procedures. Fresh tissue, selected for microscopy, has to be fixed, embedded in paraffine, sliced on a microtome, stained, dehydrated, cleared in xylol and mounted for observation.

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