

finitely more perplexing problems which are associated with the higher cells and their intense differentiation.

In the same way a true and wide notion of pathology is obtained by working up from plant life, for plants have their hemorrhages from injury and their exudations under attacks of parasites. They have their own necroses from impairment of the circulation, an alteration in their fluids from disease and a development of new products such as gallic acid. Again a perverted nutrition gives rise to ischaemia, chlorosis, icterus and gangrene, and even cancerous growths. There are the sclerotic changes induced by the fungi, and a wide door is still open which will lead to much knowledge through inoculation and infective experiments upon plants. A bruised plant bleeds and sloughs, open wounds are liable to microbic infection, there is a coagulation of the fluids, with pathologic secretions under specific irritation, which appear as tragacanth, manna, and other resinous materials. In plants one does best see the tendency to repair and to neoplastic growths. These are the tumors commonly grouped as xylomata, which probably differ widely from each other, and which the student knows only vaguely and incompletely as the source of certain astringent drugs.

Coming to the lower animals one sees commonly enough the epithelial neoplasms and sarcomata in fishes; sarcoma of the testicle is common in the testicle of the dog and pig, and melanotic sarcoma in the anal region of the horse. Cartilaginous tumors in the breasts, psammoma in the brain, lipoma, osteoma, and fibroma are all well distributed. If one ventures into the field of medicine numberless illustrations crop up. Garrod remarked that gouty patients are a kind of birds. Goitre affects animals in those districts where it is common in man. Calcareous deposits occur in the oviducts of birds as in the human prostate, and eczemas are a heritage of plants as "scab" of the lower animals and of man.

The importance of all this is not without recognition, and many universities are now teaching the subject in an orderly manner.

Nor must the economic value of the subject be lost sight of. The work of Pasteur upon the silkworm disease, splenic fever, chicken cholera and rabies is of prime economic importance, and this feature will give an immense impulse to comparative pathology.