

nounced with the increase of the gastric secretion. The lipase was decreased in a case of subacid gastritis, and absent in a case of achylia gastrica, and a case of carcinoma of the stomach.

The Pathology of Lymphatic Leukemia.—General opinion has changed from one viewpoint to another regarding the etiology and pathogenesis of lymphatic leukemia until at present arguments are being brought forward to show that the condition is allied to a tumor growth. GULLAND and GOODALL (*Jour. Path. and Bact.*, 1906, xi, 333) have recently studied ten cases of lymphatic leukemia and two cases of chloroma previously reported by Dunlap and Bramwell. They consider that acute and chronic leukemia are essentially the same condition, and that there is no histological difference between them and the affections known as chloroma. They point out that the bone-marrow is always extensively affected, while the incidence of lymphatic infiltration elsewhere is exceedingly varied. The spleen and lymph glands are most enlarged in the most chronic cases, whereas in some instances the lymph glands are uninvolved. In the lymph glands the germinal centres are generally absent and in the spleen the Malpighian bodies are atrophied. Arguing from these points and the observations of others, Gulland and Goodall conclude that the bone-marrow is the starting-point and essential seat of the disease. Actively proliferating cells from the marrow are carried by the blood to other tissues and organs, where they multiply actively, as may be seen in sections, and thus produce the packing of glands and infiltration of organs with lymphocytes. Even the formation of lymphoid new-growths in a variety of tissues may occur. The excess of cells is associated with phagocytosis of lymphocytes in glands, spleen, and other organs, including the marrow itself. By the excessive production of lymphocytes in the marrow the available space for red cell formation is crowded out. The decrease of the erythroblastic tissue gives rise to a smaller production of red cells and to a varying and frequently extreme degree of anemia.

Gulland and Goodall suggest that the bone-marrow proliferation is due to a disturbance of the mechanism governing cell production rather than to a response to chemotaxis in the ordinary sense. The condition may thus be considered a disturbance in nutrition, which, in the present state of our knowledge, cannot be distinguished in its results from tumor growth, although the initial change is probably more widespread than is usual in ordinary tumor formation.

Schultz (*Ziegler's Beiträge*, 1906, xxxix, 252) from the study of a case of acute lymphatic leukemia comes to much the same conclusions. In his case the bone-marrow was most affected, and he considers that in this organ was the seat of the disease. The proliferating marrow cells arrive in the blood stream and are carried to the various organs. Where the conditions are favorable the cells proliferate in the organs, forming limitless tumors, which, on their part, produce cells and throw them out into the circulation, thus giving rise to a vicious circle.

Although Veszprimi (*Virchow's Archiv.*, 1906, clxxxiv, 220) does not consider acute lymphatic leukemia as a true tumor, he likens the process in certain particulars to a new-growth. In three cases of the large cell type he found the bone-marrow especially affected, and regards this organ as the original seat of the disease. A cell peculiar to the bone-

marrow, immature and not an adult lymphocyte, is the one which proliferates, and by casting elements into the blood, secondary tumor-like proliferating growths are formed in various organs.

Experiments upon Replantation of the Brain-substance.—SALTYKOW (*Arch. f. Psychiatrie*, Band xl, Heft 2) has excised and replanted successfully small portions of the cortex of the brain in forty young rabbits, in order to study the changes that take place in the isolated portion of brain-substance and in the surrounding nerve tissue. The operation, when done carefully and with rigid technique, may be accomplished without much injury to the health of the animal. The rabbits were killed at different periods after the operation. In the successful replantations, no infection occurred either in the meninges or the brain-substance. One might expect the replanted piece of brain-substance to undergo softening; but, on the contrary, it heals as any other tissue. The cellular elements of the replanted tissue remain for a time intact, show progressive changes, and finally the specific elements die. Well-preserved ganglion cells were seen on the eighth day after replantation. From the eighth hour on they showed progressive changes, noticeable in the swelling of the protoplasm, enlargement of the nucleus, and increase of the chromatin and nucleoli. On the eighth day definite mitoses were seen. The glia cells showed numerous mitoses on the seventh day, and were still present on the twentieth day after replantation. The bloodvessels of the replanted tissue presented, from the second and third days, abundant mitotic growth of the endothelial cells and of the perivascular cells. Later, the vessels connected with the newly formed vessels of the surrounding tissue. The nerve fibers degenerated or disappeared rapidly from the replanted tissue. The encapsulating connective tissue and that arising about the newly formed bloodvessels gradually replaced the replanted bit of brain-matter, remains of which could be found as granular masses on the seventy-eighth day after operation. Outside of this connective-tissue scar a zone of glia cells formed. The author considers that the much disputed question as to whether the ganglion cells of warm-blooded animals are capable of proliferation under suitable stimulus can be answered in the affirmative; for in the neighborhood of the wound, he saw, two to six days after operation, numerous mitoses in the ganglion cells, with division of the protoplasm. Newly formed nerve fibers were seen in the neighborhood of the wound, from the twenty-fifth day on, growing into the gliomatous scar. The author considers that the "Körnchenzellen" arise primarily from the perivascular cells, and finally, from preformed connective-tissue cells.

Cultivation of *Treponema Pallidum* de Schaudinn.—LEURIAUX and GEETS (*Cent. f. Bakt. u. Parasit.*, Orig., 1906, Band xli, p. 684) claim to have procured pure cultures of these spirochetæ from the cerebrospinal fluid of cases of secondary syphilis. In forty-two lumbar punctures they have obtained growths of the organisms three times. In thirty-eight cases the fluid was sterile, and once it was contaminated. One part of neutral bouillon was added to two parts of spinal fluid, and the mixture placed in the thermostat at 37° C. for three or four days. The liquid was then centrifugated for twenty minutes, and the slight sediment smeared over coagulated pork serum. The growth