In dogs examined after three months the spleen was found to be diminished in size, paler and firmer. In those examined one year after ligation of the splenic veins the organ was found to be greatly atrophic and fibroid, in two cases completely separated into small islands or lobes of splenic tissue, each lobe having a separate vein running into the gastro-splenic omentum, and anastomosing with veins from the stomach. Such a collateral circulation was found established in all cases.

All animals with splenic atrophy become very fat. Hyperplasia of the prevertebral hemolymph nodes was noted. There was a slight anemia, the hemoglobin being reduced to a greater degree than the red blood cells. No lasting changes in the white cells were observed. Microscopically the spleen showed a lymphoid atrophy, relative increase of stroma and excessive pigmentation.

These experiments would indicate that obstruction of the splenic veins of dogs by ligation is not followed by a fibroid hyperplasia of the spleen but by a partial atrophy. A more or less complete venous collateral circulation is always produced. The picture of splenic anemia as seen in man can not, therefore, be reproduced in the dog, by an obstruction to the venous outflow from the spleen.

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## An experimental control of Fischer's attraxin-theory.

By **C. SNOW.** (Communicated by **ALDRED S. WARTHIN.**)

[*From the Pathological Laboratory, University of Michigan.*]

Fischer recently reported from Ribbert's laboratory[1] that by injecting a solution of Scharlach R, Sudan III or Indo-phenol in olive oil under the skin of the ears of rabbits he was able to get an epithelial proliferation which was not to be distinguished histologically from a squamous-celled carcinoma in man. He was not able to get this result with other substances acting as irritants, and therefore assumed the existence of specific bodies — attraxins — in the injected solution, which exerted a chemotactic influence on the epithelial cells.

[1] Fischer: *Münch. Med. Wochenschrift*, Oct. 16, 1906.

His work has been repeated in this laboratory as nearly as was possible from the meagre description given of his technic. Three old and three young rabbits were injected under the skin of the ear with the Scharlach R-olive oil solution, and the injected tissue excised and examined at times varying from seven to sixty-one days. Our results show that the solution has absolutely no influence on the epithelial elements, but acts as a mild irritant, inducing a chronic inflammation with slight reaction on the part of the connective tissue in the case of the old rabbits, and a greater reaction with the formation of foreign body giant cells in the case of the young rabbits, the conclusion being that the attraxin theory is without sound foundation, in so far as "Scarlet-oil" is concerned.

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## The effects of struggle on the content of white cells in the lymph.

By **F. PEYTON ROUS.** (Communicated by **ALDRED S. WARTHIN.**)

[*From the Pathological Laboratory, University of Michigan.*]

As the first stage of an investigation into the content of white cells in the lymph under certain common physiological and pathological conditions, the author has studied the effects on this content of variations in muscular activity. The lymph running from the thoracic duct was collected in a special mixing-tube — 3 c.c. of lymph to 3 c.c. of a 4 per cent. solution of sodium citrate in 0.8 per cent. salt solution — tinting accomplished with a trace of methyl violet, and counts made in the blood-counting chamber. Adult dogs under morphin and chloroform were used.

Preliminary determinations, with the animal quiet, showed that for any one individual the number of leukocytes per c.mm. of lymph was practically a constant during the 1–4 hours in which observations were made. Thus certain unavoidable changes in the body state — increased concentration of the blood as the body lymph drained away, variations in the amount of anesthetic — could for later work be ruled out as regards any marked influence in lymph's cell content.