

which is not concentrated. 3. Redilution of concentrated bile makes the bile ineffective, proving that infection is not responsible for the change.

8776 P

Sickle Cell Anemia In Deer.*

EARL C. O'ROKE. (Introduced by R. Isaacs.)

From the School of Forestry and Conservation, University of Michigan, Ann Arbor.

Although the presence of the "sickling" phenomenon has been described in man, presumably limited to the negro group, its presence in animals has been noted but rarely. Langeron¹ reported "demilune" forms of red blood cells of white rats and guinea pigs with rickets, and he reproduced these forms by the injection of lead acetate into healthy animals. It is not known, however, what relation these cells had to the phenomenon of sickling.

During the course of the study of 178 deer in the past 8 years, 14 were found in which the phenomenon of sickling was clearly demonstrated. One animal was found in Marin County, California, but all of the others were from 2 regions in the lower peninsula of Michigan, one near Alpena and the other near Bitely. All of the animals in these regions did not show sickleemia, however. The localization of the groups of affected animals suggests a hereditary possibility as is noted in human cases. In 100 autopsies on animals shot in the Edwin S. George Reserve of the University of Michigan, no animals showed sickling of the red blood cells. This herd is closely inbred.

This phenomenon was noted in animals shot for specimens, as well as in those found dead in the snow or otherwise well preserved. The cells in fixed films showed elongated, crescent shapes, with pointed ends, and relatively wider bodies (Fig. 1). The phenomenon was observed in fresh mounts sealed with petrolatum and allowed to stand. They resembled in every respect similar cells noted in human cases.

A rather striking similarity of symptomology was also noted. In those individuals in which field conditions permitted a thorough

*Specimens for autopsy, courtesy Michigan Department of Conservation.

¹ Langeron, M., *Compt. rend. Soc. de biol.*, 1911, **70**, 434.

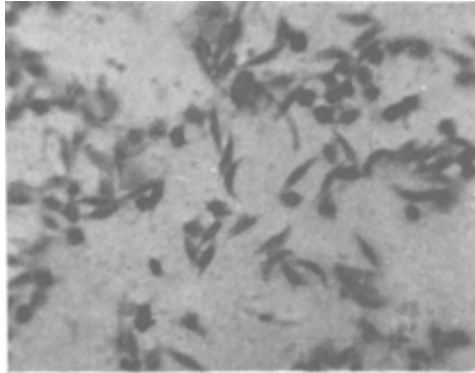


FIG. 1.

Blood film of white-tailed deer (heart blood) showing sickling phenomenon of red blood cells (Giemsa's stain).

autopsy, the animals were thin, emaciated and the blood appeared thin and watery. Atrophy of the spleen was noted in practically all of the affected deer. A similar condition has been noted in man.² Coincidental infestation with the deer louse fly, *Liptotena depressa*, or with lungworms was noted in some specimens. The abnormal frequency of broken leg bones in animals found dead in regions where sickling was observed suggests an analogy to possible bone changes (thinning of the cortex) noted in some human patients.³

It is possible that sickle cell anemia may be a factor, in addition to malnutrition, starvation and lungworm pneumonia, in the cause of the winter losses of deer in Michigan.

8777 C

Reaction of Some Rabbit Tissues to Graded Quantities of Trypan Blue.

DUNCAN C. HETHERINGTON AND R. L. McMILLAN. (Introduced
by F. H. Swett.)

*From the Department of Anatomy and the Department of Medicine, Duke
University School of Medicine.*

During the past 65 years a tremendous amount of effort has been directed toward the investigation of the nature and function of a large group of tissue cells designated collectively as the "reticulo-endothelial system". The principal tissues considered in these

² Steinberg, B., *Arch. Path.*, 1930, **9**, 876.

³ Grinnan, Andrew G., *Am. J. Roentg. and Rad. Therap.*, 1935, **34**, 297.