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# **Two Cases of Squamous Cell Carcinoma (Cancroid) in the Rumen of Bovines.**

**By G. DE KOCK, M.R.C.V.S., Dr.Med.Vet., and P. J. J. FOURIE,  
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JOEST (Spezielle Pathologische Anatomie der Haustiere 1, und 2 auflage mentions two forms of carcinoma in the rumen of bovines. The one is described as a scirrhus cancer of which ulceration is a marked feature. The other is in the form of a cauliflower-like growth.

Recently several tumours from the rumen of bovines were forwarded to this institution by the Government Veterinary Officer, Durban.

Specimen 6055, plate I, is a portion of rumen with which was forwarded a regional lymphatic gland specimen 6054, plate II, figs. 1 and 2.

The surface of the rumen is uneven owing to the ridge-like projection of the tumour into the lumen of this organ. This projection is in the region of one of the pillars of the rumen. The surface of the tumour is devoid of papillae. On section the wall of the rumen is seen to be markedly thickened up to 7 cms. deep. The tumour is situated in the substance of the wall. It is of a yellowish grey colour and extends from the mucous membrane to the serosa, occupying the entire depth of the wall. Macroscopically the tumour is somewhat sharply marked off from the remaining tissue of the wall. Superficially it encroaches on the muscular layer of the pillar and in places this is completely replaced by tumour tissue; laterally there is abundant fibrous tissue which is of a greyish white colour and glistening. This fibrous tissue is up to 5 cms. deep here and occupies most of the wall of the rumen.

*Microscopically.* The submucous connective tissues are markedly increased and in the deeper portions of the wall are islands of squamous or flat epithelial cells. In many places these have a concentric arrangement with keratinization centrally giving the characteristic pearl formation (cancroid) see plate I, figs. 2 and 3. In places the stratified epithelium from the surface of the rumen is continuous with the epithelium forming the carcinoma in the deeper tissues.

*The Lymphatic Gland, see plate II, figs. 1 and 2,* macroscopically is markedly enlarged and measures  $4\frac{1}{2}$  cms. in diameter. It has a thickened capsule 2 mm. in diameter which is greyish white in colour and glistening. The greater part of the gland is markedly altered. Centrally there is a mass of connective tissue measuring  $\frac{1}{2}$  by 1 cm. and from here an irregular and radiating fibrous network passes towards the periphery of the gland. In the meshes of the

network are recognized irregular pale yellowish grey foci of tumour tissue. The whole is fairly well marked off macroscopically from what appears to be normal glandular tissue, only a small portion of which is still recognized towards the periphery of the gland at one end.

*Microscopically.* The capsule is very much thickened, only small portions of lymphoid tissue are still present. The gland shows a well-developed fibrous stroma in which are found thick strands of squamous or flat epithelial cells. In many places these have a concentric arrangement, the central cells of which are undergoing keratinization forming characteristic pearls (cancroid). In this case the tumour cell emboli were carried in the lymph stream from the rumen and developed metastasis in the regional lymphatic gland.

*Specimen 6060* is the second case that was brought to our notice, see plate II, figs. 3 and 4. The tumour is in the form of a large lobulated growth measuring 10 by 9 by 5 cms. and projecting into the lumen of the rumen. It is attached over an area about half the size of the tumour itself. The surface of the tumour is in the form of numerous irregular convolutions like the gyri of the brain (encephaloid). These are up to 1 cm. in diameter; between the gyri are irregular sulci varying in depth. The surface of the gyri are irregular, roughened and devoid of papillae.

Microscopically the tumour consists of a fibrous stroma and strands of flat epithelial cells forming characteristic pearls. This form is therefore quite typical of the cauliflower-like carcinoma mentioned by Joest in the rumen of bovines.

PLATE I.

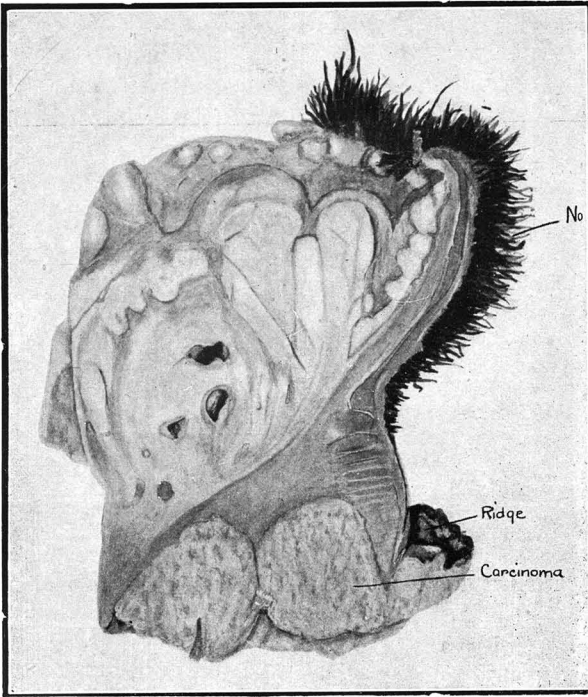


Fig. 1.—Specimen 6055. Cancroid rumen, bovine.

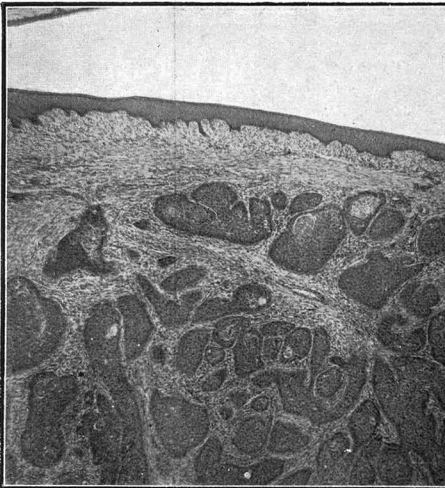


Fig. 2.—As above. Showing also the mucous membrane.  
*Carcinoma.*]

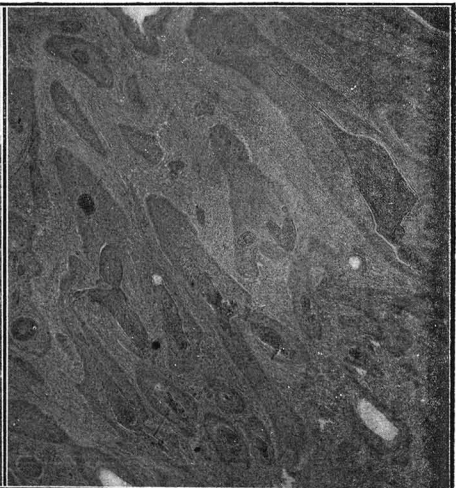


Fig. 3.—As above. Cancroid in depth of wall of rumen.

[*De Kock & Fourie.*

PLATE II.

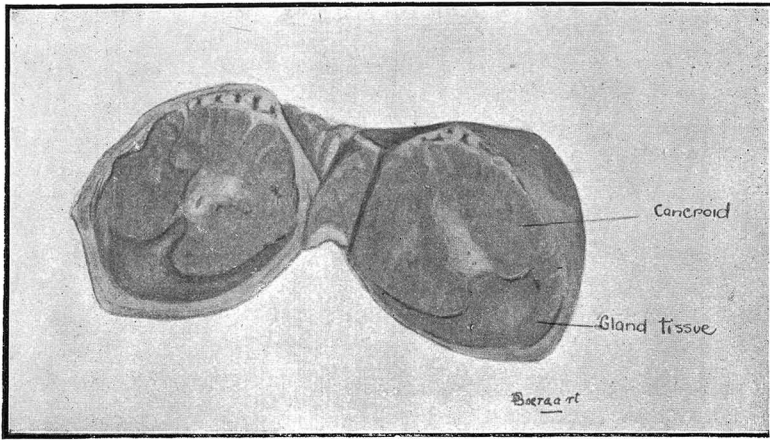


Fig. 1.—Specimen 6054. Regional lymphatic gland.

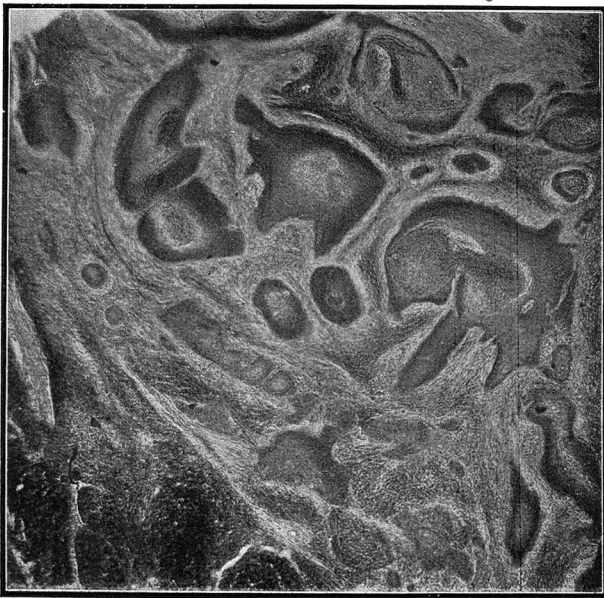


Fig. 2.—As in Fig. 1 magnified

*Carcinoma* ]

[*De Kock & Fourie*

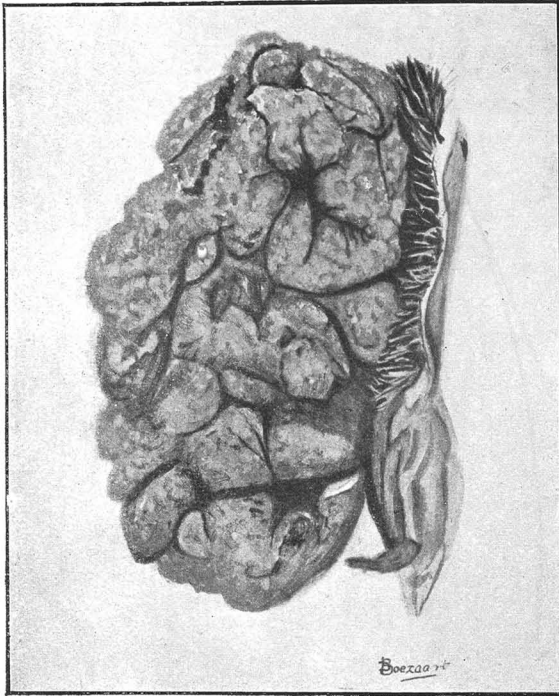


Fig. 3.—Specimen 6060. Canceroid rumen, bovine.

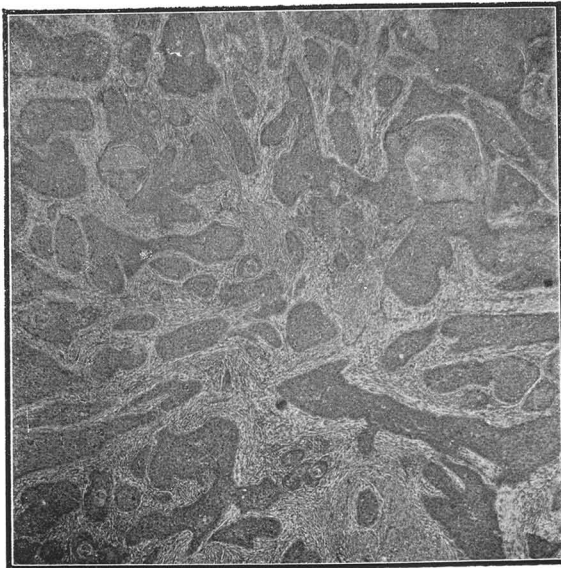


Fig. 4.—As Fig. 3, section from depth of wall.  
*Carcinoma.* [De Kock & Fourie.]