THE
JOURNAL OF
COMPARATIVE PATHOLOGY
AND
THERAPEUTICS.

VOL. XXIV.—NO. 1. MARCH 31, 1911.

PRICE 2s. 6d.

MALIGNANT DISEASES IN BOVINES.

By A. M. TROTTER, M.R.C.V.S., Glasgow.

THIS enquiry was undertaken to ascertain the age, sex, and organ incidence of the disease in bovines affected with malignant neoplasms. A study of the distribution of these neoplasms in the bovine species is interesting, and furnishes many anomalies when compared with their distribution in the human subject. Whilst it is not intended to refer to all the many theories which have from time to time been promulgated to explain the origin or causation of these neoplasms, the writer thinks it advisable to mention one in passing. Many observers have attempted to attribute the increasing frequency of cancer in man to an increased flesh diet, and in support of their contention assert that they have never observed a case of malignant disease in a vegetarian. Unfortunately, however, a purely vegetarian diet is not a preventive against malignant disease. If it were so then bovines would not be found thus affected. Undoubtedly aged bovines are as subject to these tumours as is the human subject. No doubt malignant disease of bovines may be rarely met with in certain abattoirs in this country, because in many instances these animals are slaughtered at an age when malignant disease is not common. In man these tumours are rarely met with in youth or early manhood, and it is at an age comparable to these periods of the human race that bovines in prime condition for food purposes are slaughtered. When, however, bovines are kept until they have reached old age then malignant disease is frequently found.

It was at first intended for the purposes of this enquiry to take the first 300 consecutive cases and ascertain the prevalence from the

number of animals slaughtered during the period, but, unfortunately, owing to official work which required immediate attention, the enquiry had to be discontinued for some time, and therefore the compilation was intermittent. The salient features of the 300 cases are here tabulated for easy reference.

<i>Sex.</i>	<i>Number Affected.</i>	<i>Percentage.</i>
*Oxen . . .	2	·6
Bulls . . .	—	—
Cows . . .	298	99·3
	<u>300</u>	

* Nos. 186 and 207.

In mankind statistics have been compiled to show the relative frequency of malignant tumours in the two sexes. Unfortunately the frequency with which the sexes in the bovine species are affected cannot readily be ascertained, as in this country castrated males are slaughtered at an earlier age than what can be regarded as the cancer period. Only two castrated males were found affected. It is somewhat surprising, however, to find no bulls affected. A large number of bulls are slaughtered in Glasgow, and, as a rule, are older at the time of slaughter than are oxen. Man is as liable to malignant disease as woman, indeed more so in some situations, *e.g.*, the lips and tongue. The mere fact that two cases occurred in castrated males and none in non-castrated males raises the interesting question whether castration renders animals more prone to malignant disease, but, unfortunately, the small number reported upon does not permit of any conclusion. The number of oxen slaughtered exceeds that of bulls, but the numerical superiority of the former is counterbalanced by the greater age of the latter. Bashford, in the *Report of the Imperial Cancer Research Fund*, No. 2, Part I., p. 34, states: "The occurrence of cancer in castrated and spayed animals at the same age as in entire animals show that neither an abnormal internal secretion in the reproductive organs nor the cessation of a normal one is the cause of cancer."

<i>Age.</i>	<i>Number Affected.</i>	<i>Percentage of Total.</i>
(a) 15 months	1	—
(b) 18 months	1	—
(c) 3 years	1	1·0
Aged	297	99·0
	<u>300</u>	

Nos. (a) 186; (b) 119; (c) 207.

In only three instances could the exact age of the old animals be determined, but taking into account the class of animal slaughtered it is probably fairly accurate to return 25 per cent. as under fifteen years, and the remainder between fifteen and twenty years.

<i>Condition.</i>	<i>Number Affected.</i>	<i>Percentage.</i>
Poor	74	24·6
Fair	202	67·3
Good	24	8·0
	<hr/> 300	

It cannot be denied that malignant disease causes emaciation when vital organs are involved, but it must not be inferred that the condition of all those animals classed under the headings "poor" and "fair" was the natural consequence of their being thus affected. The affected animals were members of large droves, and their fellows were in much the same condition, some worse, others better. Their condition was due in many cases to inability to prehend their food, although undoubtedly some had become emaciated through the disease.

<i>Country of Origin.</i>	<i>Number Affected.</i>	<i>Percentage.</i>
Ireland	268	89·3
Scotland	23	7·6
Unknown	9	3·0
	<hr/> 300	

Of the 300 cases no less than 268, or 89·3 per cent., were found in Irish cows. This large number can be in great measure accounted for in two ways, namely, by the large proportion of Irish cows slaughtered in Glasgow, and also by their greater age. As a rule, stockowners in Scotland do not keep their cows as long as they do in Ireland. Many of the Scotch cows affected were consigned from the Highlands, where somewhat similar conditions prevail.

Classification of Tumours.

In mankind it is stated that sarcoma, as a rule, is more common in youth and in early manhood, and that carcinoma is more frequently found in middle and old age.

The frequency with which the different kinds of neoplasms occur in man has been shown by Professor Adami and Dr M'Crae from a list of cases sent in from the General Hospital and Royal Victoria Hospital, Montreal. Of 275 cases of malignant disease 212 were carcinoma and 63 sarcoma.

Of the 300 cases under review, 279, or 91·47 per cent., were carcinoma; and 26, or 8·52 per cent., were sarcoma, making a total in all of 305 cases of primary neoplasms, the additional cases being accounted for by the fact that four animals were found affected with more than one primary tumour, as shown in the following table:—

One primary tumour	296	98·6 per cent.
*Two primary tumours	3	1·0 "
†Three primary tumours	1	·3 "

* Nos. 29, 68,¹ and 272.

† No. 116.

¹ No. 68 was affected with three primary tumours in different organs, but one was a myoma.

The histological structure of the different neoplasms in Nos. 29, 68, 272, and 116 places their independent origin beyond dispute. These cases raise the interesting question whether there is yet to be defined a condition of the body which predisposes an animal to malignant disease, as these four cases tend to show. Of course it must be admitted that it is possible that other factors were operating prejudicially on the different organs at one and the same time.

Organs and Tissues Primarily Affected.

	<i>Number.</i>	<i>Percentage.</i>
Liver	222	74.0
Rumen	25	8.3
Thymus	16	5.3
Intestines	10	3.3
Lung	8	2.6
Ovary	5	1.6
Eye	4	1.3
Vulva	3	1.0
Lymph glands	3	1.0
Kidney	1	.3
Gall bladder	1	.3
Uterus	1	.3
Bones	1	.3
Skin	1	.3
Fascia	1	.3
Salivary glands	1	.3
Undetermined	2	.6
	<hr/> 305	

Rumen, 25. — 24 squamous epithelioma. 1 scirrhus cancer. Squamous epithelioma: Nos. 23, 42, 53, 56, 61, 73, 83, 85, 93, 100, 116, 141, 144, 153, 156, 174, 179, 185, 192, 205, 251, 264, 292, 294. Scirrhus cancer: No. 68.

Thymus, 16. — 11 round cell sarcoma. 5 mixed cell sarcoma. Round cell sarcoma: Nos. 11, 17, 22, 41, 50, 105, 134, 135, 207, 219, 297. Mixed cell sarcoma: Nos. 116, 131, 132, 262, 272. Portions affected: thoracic, 10; cervical, 6.

Intestines, 10. Small intestines, 8. — 7 carcinoma: Nos. 114, 126, 182, 187, 226, 228, 247. 1 sarcoma: No. 76. Large intestines. — 1 (rectum) carcinoma: No. 77. Ileo-cæcal valve, 1 carcinoma, No. 2.

Lungs, 8. — Carcinoma: Nos. 32, 129, 145, 181, 188, 190, 210, 256.

Ovary, 5. — 4 carcinoma. 1 sarcoma. Carcinoma: Nos. 54, 68, 119, 217. Sarcoma: No. 209.

Eye, 4. — Carcinoma (squamous cell): Nos. 97,* 158, 283, 289.

* Cells did not cornify.

Vulva, 3. — Carcinoma (squamous cell): Nos. 20, 90, 272.

Lymph Glands, 3. — Sarcoma: Nos. 75 (mesenteric); 186 (mesenteric); 276 (tracheal).

Kidney, 1.—Colloid cancer: No. 29.

Gall Bladder, 1: Columnar cell carcinoma: No. 38.

Uterus, 1.—Carcinoma: No. 122.

Bones (8th rib).—Spindle cell sarcoma: No. 123.

Skin.—Carcinoma: No. 154.

Fascia.—Spindle cell sarcoma: No. 284.

Parotid.—Mixed cell sarcoma: No. 255.

The frequency with which the different parts are affected in man and bovine is of great interest, and brings into prominence some of the hypotheses which have been promulgated from time to time as having a more or less direct bearing on the causation of malignant disease. It has been ascertained that the period at which cancer is most likely to occur is when the potentiality of cell proliferation is declining to its ultimate cessation. This is well exemplified in the case of the thymus gland. This gland, which is most prominent in early life, tends to rapidly disappear, the cervical portion more rapidly than the thoracic, the latter being discernible up till about the eighth or ninth year, and sometimes even later. Virchow, who studied tumours present in the anterior mediastinum, believed that the neoplasms in this situation, having a regular outline, were usually thymic in origin. More recent observers contend that tumours of this organ are of more frequent occurrence than stated by Virchow. The whole of the tumours found—of which six were situated in the cervical portion and ten in the thoracic—were of a sarcomatous nature. This is what one would naturally expect in a gland in which the lymphatic tissue is greatly in excess of the epithelial cells. In man tumours of this organ are more frequent in early manhood, but instances are recorded where they have occurred in old age. The age in which these tumours occur in bovine is comparable to that of early manhood in the human subject.

Cancer of the mamma and uterus is of frequent occurrence in the human female, but in the 300 cases here recorded as occurring in bovine quite a marked difference is noted, none being found in the mamma, and only one in the uterus—a carcinoma. Bland Sutton, in his work on tumours, innocent and malignant, states that the ages at which cancers are most commonly found are: mamma, duct variety, forty-five to fifty-five years, acinous variety, forty to fifty years; uterus, forty to fifty years; that is, when the functional activity of these organs are on the wane.

Saint Cyr gives the age of puberty in the bovine species at from twelve to fourteen months, but instances have been recorded where fecundation was effected at a much earlier age, *e.g.*, two months, three months, and four and one-half months. No doubt these animals ought not to be mated until they have attained the age specified by Saint Cyr, but it must be accepted as proved that puberty occurs in bovine at a much earlier period, probably from three to six months. If it is difficult to state when puberty commences, it is still more difficult to determine when the climacteric period occurs. Youatt, in his work on cattle, p. 323 (1870), quotes an instance where a cow, thirty-two years old, gave birth to a healthy heifer calf. Numerous cases of cows about twenty years old reproducing the species are known, but how long this power

would have continued had the animal not been slaughtered it is of course impossible to state.

It is more difficult to compare gastric carcinoma as it occurs in man and in bovines in the light of diminished cellular activity, but in all probability other two factors having a more or less direct bearing on the causation of cancer fall now to be considered. It has been contended, and it must be admitted that much evidence has been adduced in support of such a contention, that traumatism and chronic irritation from any cause predispose the affected part to malignant disease.

Bashford, in the third scientific report on the investigations of the Imperial Cancer Research Fund, enumerates a large number of extremely interesting instances where cancer has followed long continued chronic irritation. One or two instances will, however, suffice to show the relationship. In England and Wales out of 10,000 deaths from cancer in males, 926 were affected in the lip, tongue, buccal mucous membrane, and cheek, whilst in females there were only eighty-three cases. The higher incidence of cancer in males than in females at these sites is attributed to the irritation set up by clay pipes, etc. In India, on the other hand, the number of cases of cancer of these parts is six times greater than in England and Wales. This is accounted for by the irritation produced through chewing a mixture of betel leaves, areca nut, tobacco, and slaked lime. In Kashmir epithelioma of the anterior abdominal wall is frequently met with. The Kangri suspend a charcoal fire from the waist under their robes to maintain warmth. The adjacent parts are frequently injured through burning charcoal coming into contact, and cancer frequently occurs in the cicatrix thus formed.

The irritation set up by the presence of parasites appears also to have a direct bearing on the causation of cancer. In Egypt cancer of the penis and bladder is frequently associated with bilharzia hæmatobia. Borrel has placed on record instances in which carcinoma was associated with nematodes and cestodes; Bashford, a case of carcinoma of the small intestines of a mouse at the site of attachment of a tapeworm; Bridré and Conseil examined about 2000 wild rats, and found primary sarcoma of the liver in five, of which four contained cystic. fasciolaris. These observers believe, however, that the embryo of the *tænia crassicollis* was the carrier of infection, and thus indirectly the cause of these neoplasms. It is, therefore, in all likelihood these two factors—traumatism and chronic irritation—that play an important part in the causation of cancer of the stomach. It will be noted that no case of malignant disease was discovered in the true stomach of the ox. All the cases, twenty-five in number, were found located in the rumen. In every instance these tumours originated in or involved the rugæ. They were all squamous cell epithelioma with one exception, which was scirrhus. A careful examination of these tumours revealed that many of them had originated in the cicatrix of a gastric ulcer, whilst others appeared to have been at first papillomata, afterwards assuming malignant characteristics. Papillomata are frequently found in the rumen.

Statistics show that the most common seats of cancer in man, in the order of frequency, are: (1) mamma; (2) uterus; (3) stomach. In bovines, on the other hand, the organ most frequently affected is

the liver. Of the 305 primary tumours examined and tabulated no fewer than 222 had their origin in the liver. In the human subject primary cancer affecting this organ is rare. The variety of cancer which most frequently affects the liver of the ox was described by the writer in detail in the *Journal of Comparative Pathology*. It is true that many of the tumours here classed as adeno-carcinoma had not, to the unaided eye, evinced the power to break through their limiting membrane and invade the adjacent tissues. It must be remembered, however, that the animals in which these tumours were found present were slaughtered for food, and did not die from natural causes. In all probability had these animals been permitted to live their allotted span these tumours would have assumed the usual characters of malignancy. The histological arrangement of all these tumours was typical of carcinomata, and, therefore, whilst some did not show any outward evidence of malignancy these must also be regarded as adeno-carcinoma. It is interesting to note that the majority of the affected livers showed an increase in the interstitial and periportal connective tissue, thickening of the walls of the bile ducts, and calculi and distoma hepaticum in their lumen.

The eye is probably another site in which these two factors exert an influence in the causation of malignant disease. In bovines this organ is frequently irritated, and even vision is destroyed by the presence of foreign bodies. Four of the three hundred animals were affected in this organ.

Another site in which traumatism probably contributes to the development of carcinomatous growths is the vulva. Three cases were found. This region is frequently lacerated during parturition, and also by being probed by the horn of another animal.

The intestinal canal was found affected in ten cases, of which eight were found to have their site in the small intestines, one at the ileo-cæcal valve, and one in the rectum. Of the eight cases involving the small intestines seven were carcinoma and one was sarcoma. In the human subject sarcoma in this situation is extremely rare compared with carcinoma. In this instance it was of the round-cell type, with widely distributed secondary lesions in the mesenteric, gastric, lumbar, and hepatic lymph glands, the substance of the liver, and both lungs. The distribution of these cases differs materially from that found in the human subject. Bland Sutton states (page 301): "Of every 100 cases seventy-five occur in the rectum, and of the remainder twenty-three would be localised in the large bowel and two in the small intestine, including the ileo-cæcal valve."

It will be noted that no malignant neoplasms are recorded as affecting many sites frequently attacked in mankind, but this apparent omission is to be attributed to the small number of cases included in this enquiry. The writer has frequently observed malignant growths in other situations, and he is of opinion that there is no part of the body prone to their development in mankind but has its counterpart in the bovine species.

In addition to the 300 cases of malignant disease, there falls to be mentioned that the adrenals were affected with some form of neoplasm in twenty-seven instances, the nature of which will form the subject of a future communication.

No.	Animal.	Age.	Condition.	Consigned from.	NEOPLASM.		REMARKS. (Size, Colour, Consistency, Margin, etc.)
					Primary.	Secondary.	
1	Cow	Aged	Fair	Sligo	Liver, left lobe	Parietal and visceral peritoneum; lymph glands: hepatic, right renal, left prepectoral, mediastinal, bronchial	Carcinoma Thrombi present in portal vein.
2	do.	do.	do.	Ballina	Intestines, ileo-cæcal valve	—	do.
3	do.	do.	do.	Ireland	Liver, mid lobe	Throughout liver	Adeno-carcinoma
4	do.	do.	Poor	do.	do.	Vicinity	do.
5	do.	do.	Fair	do.	Liver	—	do.
6	do.	do.	do.	do.	do.	—	do.
7	do.	do.	do.	Ballina	Liver, portal fissure	—	do.
8	do.	do.	do.	Ireland	Liver, right lobe	—	do.
9	do.	do.	Poor	do.	Liver, right & mid lobes	—	do.
10	do.	do.	do.	do.	Liver, left lobe	Throughout liver; substance of both lungs	do.
11	do.	do.	Fair	do.	Thymus, thoracic part	Right pleura	Round-cell sarcoma
12	do.	do.	do.	do.	Liver, right lobe	Vicinity	Adeno-carcinoma
13	do.	do.	do.	do.	Liver, left lobe	Throughout liver; substance of both lungs	do.
14	do.	do.	Poor	do.	do.	Throughout liver; lymph glands: hepatic, mediastinal	do.
15	do.	do.	Fair	do.	Liver, right lobe	—	do.
16	do.	do.	do.	do.	Liver, left lobe	Vicinity	do.
17	do.	do.	do.	do.	Thymus, thoracic part	Right and left pleura; substance of apex of both lungs	Round-cell sarcoma
18	do.	do.	do.	do.	Liver	—	Adeno-carcinoma
19	do.	do.	Poor	do.	Liver, left lobe	Throughout liver	do.
20	do.	do.	Fair	do.	Vulva	—	Squamous epithelioma
21	do.	do.	Poor	Sligo	Liver, mid & left lobes	Lymph gland: hepatic, mediastinal	Carcinoma
22	do.	do.	Fair	Scotland	Thymus, thoracic part	—	Round-cell sarcoma
23	do.	do.	do.	Ireland	Rumen	—	Squamous epithelioma
24	do.	do.	Good	do.	Liver, right lobe	—	Adeno-carcinoma
25	do.	do.	Fair	do.	Liver, left lobe	—	do.
26	do.	do.	Poor	do.	Liver, right lobe	Substance of both lungs	do.
27	do.	do.	do.	do.	do.	Vicinity	do.
28	do.	do.	Fair	do.	do.	Lymphatic glands: hepatic	do.

29	do.	do.	—	{ Liver, mid & left lobes	Throughout right lobe; substance of both lungs	do.	do.	Vegetable marrow, green, pulpy, pulmonary lesions.
30	do.	Poor	Ireland	{ Kidney, right	Pillars of diaphragm	do.	do.	Millet seed to pea, green, sharply defined.
31	do.	Fair	do.	Liver, mid lobe	—	do.	do.	Cocoanut, green, pulpy, lobulated, hæmorrhages, well defined.
32	do.	do.	do.	Liver, right lobe	—	do.	do.	At inferior part of right lobe is a yellow tumour the size of a hen's egg, and in the substance of the same lobe is another, green in colour, and of the dimensions of an orange.
33	do.	Poor	do.	Lung	Lymphatic glands: anterior, middle, and posterior mediastinal; œsophagus; body of 3rd left rib	Round-cell carcinoma	do.	The bone lesion was about the size of a six-penny piece, with sharply defined margin.
34	do.	Fair	do.	Liver, left lobe	Vicinity of primary	Adeno-carcinoma	do.	Large Java orange, yellow and green, soft, pulpy.
35	do.	do.	do.	Liver, right lobe	do.	do.	do.	Child's head, yellow; in left lobe is a second neoplasm, size hen's egg, green.
36	do.	do.	do.	Liver, left lobe	—	do.	do.	Hen's egg, green, pulpy.
37	do.	Poor	do.	Liver, right lobe	—	do.	do.	Java orange, green, pulpy, well defined, hæmorrhages.
38	do.	Fair	do.	Gall bladder	Lymphatic glands: hepatic	Columnar-cell carcinoma	do.	Walnut, green, pulpy.
39	do.	do.	do.	Liver, mid lobe	Vicinity of primary and throughout right lobe	Adeno-carcinoma	do.	Pigeon's egg, yellow, firm, lobulated.
40	do.	Poor	do.	Liver, right lobe	Substance of both lungs	do.	do.	Man's head, green, pulpy, thrombi.
41	do.	Fair	do.	Thymus, cervical part	Lymphatic gland: tracheal	Round-cell sarcoma	do.	Melon, yellow, pulpy, thrombi, embolus in pulmonary.
42	do.	Poor	do.	Rumen, pillar	—	Squamous epithelioma	do.	Apple, yellow, fairly firm.
43	do.	Fair	do.	Liver, right lobe	—	Adeno-carcinoma	do.	In substance of lobe are two tumours, both size hen's egg, one green, other yellow.
44	do.	do.	do.	do.	—	do.	do.	Orange, green, pulpy, sharply defined, thrombi; embolus in blood vessel left lobe.
45	do.	do.	do.	Liver, left lobe	Vicinity; substance of lungs	do.	do.	Whole lobe and involving lower half of middle lobe, green, pulpy, well defined, hæmorrhages, thrombi.
46	do.	Poor	do.	Liver, right lobe	Throughout liver	do.	do.	Child's head, green, pulpy, sharply defined, hæmorrhages.
47	do.	Fair	do.	do.	Vicinity of primary	do.	do.	Cocoanut, yellow, pulpy, sharply defined, protruding into gall bladder.
48	do.	do.	do.	do.	—	do.	do.	Hazelnut, greenish-yellow, pulpy.
49	do.	do.	do.	Liver, right lobe	—	do.	do.	Man's head green, pulpy, sharply defined, thrombi.
50	do.	do.	do.	Thymus, cervical	Lymphatic glands: tracheal; apex of right lung	Round-cell sarcoma	do.	Ostrich's egg, yellow, like kidney, lobulated, irregular.
51	do.	do.	do.	Liver	—	Adeno-carcinoma	do.	Child's head, green, pulpy, sharply defined.
52	do.	do.	do.	Liver, right lobe	Throughout liver; substance right lung	do.	do.	—
53	do.	Poor	do.	Rumen, pillar	—	Squamous epithelioma	do.	—

No.	Animal.	Age.	Condition.	Consigned from.	NEOPLASM.			REMARKS. (Size, Colour, Consistency, Margin, etc.)
					Primary.	Secondary.	Classification.	
54	Cow	Adult	Fair	Ireland	Ovary	—	Round-cell carcinoma	Cocoonut, yellowish-green, fairly firm, cystic, well defined.
55	do.	do.	do.	do.	Liver	Lymphatic gland: hepatic; parietal and visceral peritoneal serous membrane	Adeno-carcinoma	—
56	do.	do.	Poor	do.	Rumen	Liver; parietal and visceral peritoneal serous membrane	Squamous epithelioma	—
57	do.	do.	Good	do.	Liver, left lobe	Throughout liver; lymphatic gland: hepatic	Adeno-carcinoma	Melon, yellow to grey, thrombi.
58	do.	do.	Poor	do.	Liver, right lobe	Vicinity of primary	do.	Cocoonut, greenish-yellow, pulpy.
59	do.	do.	do.	do.	Liver, left lobe	Throughout liver; lymphatic gland: hepatic	do.	Small apple, yellow, thrombi.
60	do.	do.	do.	do.	Liver, right lobe	Throughout liver; lymphatic gland: hepatic; substance of both lungs	do.	Man's head, grey to yellow, pulpy, thrombi, emboli in pulmonary artery.
61	do.	do.	Fair	do.	Rumen, pillar	—	Squamous epithelioma	Cocoonut, green, pulpy.
62	do.	do.	do.	do.	Liver, mid lobe	Vicinity of primary	Adeno-carcinoma	Melon, green, pulpy, sharply defined, thrombi.
63	do.	do.	do.	do.	Liver, left lobe	do.	do.	Man's head, yellowish-grey, thrombi.
64	do.	do.	Good	do.	do.	—	do.	Vegetable marrow, yellow, pulpy, decomposing.
65	do.	do.	Fair	do.	Liver, right lobe	—	do.	Child's head, green, pulpy, sharply defined, thrombi
66	do.	do.	do.	do.	do.	Vicinity of primary	do.	Microscopic examination — undergoing cystic degeneration.
67	do.	do.	do.	do.	do.	—	do.	—
68	do.	do.	do.	do.	{ Right ovary Vagina Rumen	Vicinity of primary	Round-cell carcinoma	Junction 1st and 2nd stomachs.
69	do.	do.	do.	do.	Liver, left lobe	Throughout liver; lymph gland: hepatic; lungs substance	Myoma	Child's head, grey and yellow, thrombi.
70	do.	do.	do.	do.	Liver, right lobe	Throughout liver	Sarcomatous cancer	Hazelnut, green.
71	do.	do.	do.	do.	Liver, mid lobe	Lymphatic glands: gastric, posterior mediastinal	Adeno-carcinoma	Cocoonut, yellowish-green.
72	do.	do.	do.	do.	Liver, right lobe	Parietal and visceral peritoneal serous membrane; lymphatic gland: mediastinal, right and left xiphoid, left suprasternal, right prepectoral, right internal iliac	do.	Man's fist, green, pulpy, sharply defined.
73	do.	do.	Poor	do.	Rumen	—	Squamous epithelioma	—
74	do.	do.	Fair	do.	Liver, right lobe	—	Adeno-carcinoma	Cocoonut, yellowish-grey, pulpy, irregularly lobulated, sharply defined, thrombi.
75	do.	do.	Poor	do.	Mesenteric glands lymphatic	Lymphatic glands: hepatic, gastric, mediastinal; substance of both lungs	Sarcoma	On microscopic examination areas show alveolar structure, grey, soft, tough.

76	do.	do.	do.	Fair	do.	Intestines, small	Lymph glands: mesenteric, gastric, lumbar, hepatic; liver substance; lungs substance	Round-cell sarcoma	—
77	do.	do.	do.	do.	do.	Intestine, rectum	—	Round-cell carcinoma	Pea to hazelnut, green.
78	do.	do.	do.	do.	do.	Liver, throughout	—	Adeno-carcinoma	Kidney potato, green, pulpy, sharply defined.
79	do.	do.	do.	do.	do.	Liver, left lobe	Vicinity	do.	Two neoplasms—both hen's eggs, grey, green, firm, soft.
80	do.	do.	do.	do.	do.	do.	Lymphatic gland: hepatic	do.	Cocoonut, green, soft, lobulated, well defined.
81	do.	do.	do.	do.	do.	Liver, right lobe	—	do.	Cocoonut, green, well defined.
82	do.	do.	do.	do.	do.	Liver, right lobe	Vicinity	do.	—
83	do.	do.	do.	Poor	do.	Rumen	—	Squamous epithelioma	Pigeon's egg, yellow, firm.
84	do.	do.	do.	Fair	do.	Liver, left lobe	Vicinity	Adeno-carcinoma	Surface ulcerated, wall thickened and inflamed.
85	do.	do.	do.	do.	do.	Rumen	Lymphatic gland: gastric	Squamous epithelioma	—
86	do.	do.	do.	do.	do.	Liver, right lobe	Throughout liver: parietal and visceral peritoneum; lymphatic glands: right internal iliac, right and left xiphoid, left suprasternal, right prepectoral	Adeno-carcinoma	—
87	do.	do.	do.	do.	do.	Liver, centre lobe	Throughout liver: lungs	Round-cell carcinoma	Man's head, yellow, firm, lobulated.
88	do.	do.	do.	Poor	do.	Liver, left lobe	Throughout liver	Adeno-carcinoma	Cocoonut, green, soft, lobulated, thrombi.
89	do.	do.	do.	Fair	do.	do.	Throughout liver	do.	Cocoonut, yellow, pulpy, lobulated, thrombi.
90	do.	do.	do.	do.	do.	Vulva and vagina	—	Squamous epithelioma	—
91	do.	do.	do.	do.	do.	Liver, right lobe	Throughout liver	Adeno-carcinoma	Hen's egg, green, pulpy, lobulated, well defined.
92	do.	do.	do.	do.	do.	do.	do.	do.	Orange, green, pulpy, well defined.
93	do.	do.	do.	do.	do.	Rumen, post. pillar	—	Squamous epithelioma	Man's fist.
94	do.	do.	do.	do.	do.	Liver, right lobe	—	Adeno-carcinoma	Orange, green and yellow, pulpy, well defined.
95	do.	do.	do.	do.	do.	do.	—	do.	Man's head, green, pulpy, well defined, thrombi.
96	do.	do.	do.	do.	do.	do.	—	do.	Melon, green, pulpy, lobulated, well defined, thrombi.
97	do.	do.	do.	do.	do.	Eye, left	—	Carcinoma	Had extended down lachrymal duct.
98	do.	do.	do.	Good	Ayrshire	Liver, right lobe	Throughout liver	Adeno-carcinoma	Orange, green, pulpy, well defined.
99	do.	do.	do.	Fair	Ireland	do.	do.	do.	Cocoonut, grey, pulpy, well defined, thrombi.
100	do.	do.	do.	do.	do.	Rumen, post. pillar	—	Squamous epithelioma	—
101	do.	do.	do.	do.	do.	Liver, mid lobe	—	Adeno-carcinoma	Three neoplasms—walnut, soft, crenated, well defined.
102	do.	do.	do.	do.	do.	Liver, right lobe	—	do.	Orange, green, pulpy, well defined.
103	do.	do.	do.	Good	Scotland	Liver, left lobe	—	do.	Man's head, green to yellow, pulpy, lobulated, well defined.
104	do.	do.	do.	do.	Ireland	Liver, right lobe	—	do.	Orange, green, pulpy, lobulated, crenated, well defined.
105	do.	do.	do.	Poor	do.	Thymus, thoracic	Pleura and pericardium	Round-cell sarcoma	Cocoonut, grey, lobulated, well defined, cystic.
106	do.	do.	do.	Fair	do.	Liver, mid lobe	Throughout liver: lymph glands: hepatic, posterior mediastinal; substance of pancreas and both lungs	Round-cell carcinoma	Cocoonut, yellow, firm, sharply defined, thrombi.

No.	Animal.	Age.	Condition.	Conserved from.	NEOPLASM.			REMARKS. (Size, Colour, Consistency, Margin, etc.)
					Primary.	Secondary.	Classification.	
107	Cow	Aged	Fair	Ireland	Liver, left lobe	Throughout liver; lungs, nodules, and emboli	Adeno-carcinoma	grey and yellow, pulpy, lobulated, sharply defined, thrombi.
108	do.	do.	do.	do.	do.	—	do.	Pumpkin, green, pulpy, lobulated, sharply defined.
109	do.	do.	Poor	do.	Liver, right lobe	Throughout liver	do.	Cocoonut, greyish-yellow, pulpy, crenated.
110	do.	do.	Fair	do.	do.	hepatic	do.	Melon, grey, pulpy, lobulated, sharply defined, thrombi.
111	do.	do.	do.	do.	Liver, left lobe	—	do.	Cocoonut, green, pulpy, well defined.
112	do.	do.	do.	do.	Liver, mid lobe	—	do.	Man's head, green, pulpy, well defined.
113	do.	do.	do.	do.	Intestine	Vicinity	do.	Man's head, green, pulpy, lobulated, crenated, thrombi.
114	do.	do.	do.	do.	Liver, right lobe	Lymph glands: mesenteric, hepatic; liver substance	Carcinoma	—
115	do.	do.	do.	do.	do.	Throughout liver	Adeno-carcinoma	Cocoonut, green, pulpy, lobulated, well defined, thrombi.
116	do.	do.	Poor	do.	Thymus, thoracic portion	Left pleura	Mixed-cell sarcoma	Man's fist, yellow, pulpy, lobulated.
117	do.	do.	do.	do.	Liver, left lobe	Vicinity	Adeno-carcinoma	Apple, green, pulpy, lobulated, well defined.
118	do.	do.	do.	do.	Rumen, pillar	—	Squamous epithelioma	3×2×4 ins.
119	Heifer	18 mos.	Fair	do.	Liver, left lobe	Vicinity; lungs	Adeno-carcinoma	Melon, green, pulpy, well defined, thrombi.
120	Cow	Aged	do.	Scotland	Ovary	Vicinity; lymphatic glands: hepatic	do.	Cocoonut, grey, pulpy, well defined.
121	do.	do.	do.	Ireland	Liver, right lobe	—	Round-cell carcinoma	Melon, cystic, lobulated.
122	do.	do.	do.	do.	Liver, left lobe	Vicinity	Adeno-carcinoma	Cocoonut, green and yellow, pulpy, lobulated, well defined, thrombi.
123	do.	do.	do.	do.	Uterus	do.	do.	Cocoonut, green and yellow, pulpy, lobulated, well defined, thrombi.
124	do.	do.	do.	do.	Body of 8th rib	Lungs: substance right and left; lymphatic glands: internal iliac and lumbar	Carcinoma	—
125	do.	do.	do.	do.	do.	Parietal and visceral serous membrane of chest cavity; lungs: substance right and left; lymphatic glands: prepectoral right and left	Spindle-cell sarcoma	—
126	do.	do.	do.	do.	do.	Throughout liver	Adeno-carcinoma	Cocoonut, green, pulpy, well defined.
127	do.	do.	do.	do.	do.	Substance of liver and lungs; lymphatic glands: mesenteric, hepatic, renal right and left, lumbar right, mediastinal	do.	Melon, yellow, pulpy, well defined, thrombi.
128	do.	do.	do.	do.	do.	do.	Round-cell carcinoma	Turkey's egg.
129	do.	do.	do.	do.	do.	do.	Adeno-carcinoma	Man's head, green, pulpy, lobulated, well defined.

128	do.	do.	Poor	do.	Liver	Throughout liver; lymph glands: hepatic; post. mediastinal	do.	Round-cell carcinoma	Melon, grey and green, fairly firm, well defined, thrombi.
129	do.	do.	Fair	do.	Lung, right	Vicinity: a few nodules in substance of both lungs	do.	Adeno-carcinoma	Cocoonut, yellowish, firm.
130	do.	do.	do.	do.	Liver, right lobe	Throughout liver	do.	Mixed-cell sarcoma	Man's head, green, pulpy, hemorrhages, well defined, thrombi.
131	do.	do.	Good	Scotland	Thymus, cervical	—	do.	Adeno-carcinoma	Man's head, yellow, firm.
132	do.	do.	do.	Ireland	do.	Lymphatic glands: prepectoral right and left	do.	Adeno-carcinoma	Man's fist, yellowish-grey, firm. (Walls of adjacent blood-vessels involved).
133	do.	do.	Poor	do.	Liver, left lobe	Vicinity	do.	Round-cell sarcoma	Hen's egg, green and yellow, pulpy, well defined.
134	do.	do.	Fair	do.	Thymus, cervical	Lymph glands: tracheal.	do.	Adeno-carcinoma	Child's head, reddish-grey, firm in parts, hemorrhages
135	do.	do.	do.	do.	do.	—	do.	Adeno-carcinoma	Child's head, reddish-grey, pulpy, hemorrhages
136	do.	do.	do.	do.	Liver, left lobe	—	do.	do.	Hen's egg, green, pulpy, well defined.
137	do.	do.	do.	do.	Liver, caudate lobe	—	do.	Pumpkin, brown and yellow, pulpy, well defined, thrombi	do.
138	do.	do.	Good	do.	Liver, left lobe	Throughout liver; substance of both lungs	do.	do.	Child's head, yellow, pulpy, lobulated, well defined, thrombi.
139	do.	do.	Fair	do.	Liver, caudate lobe	—	do.	Squamous epithelioma	Child's head, green, pulpy, well defined.
140	do.	do.	Good	Scotland	Liver, right lobe	Throughout liver	do.	Adeno-carcinoma	do.
141	do.	do.	Fair	Ireland	Rumen, pillar	—	do.	Squamous epithelioma	Cocoonut, green, pulpy, well defined.
142	do.	do.	do.	do.	Liver, left lobe	Throughout liver	do.	Adeno-carcinoma	Melon, green, pulpy, lobulated, well defined.
143	do.	do.	do.	do.	Liver, right lobe	Parietal and visceral serous membrane of abdominal cavity; lymphatic glands: lumbar and renal left	do.	Carcinoma	—
144	do.	do.	Poor	do.	Rumen	Throughout liver; lymphatic glands: mediastinal, cesophageal, lumbar left, internal iliac right	do.	Adeno-carcinoma	Cocoonut, yellow, pulpy, well defined.
145	do.	do.	Good	Unknown	Lungs	Vicinity	do.	do.	Man's head, green, pulpy, fibrous margin well marked, shows evidence of overcoming tumour.
146	do.	do.	Fair	do.	Liver, left lobe	—	do.	do.	Cocoonut, yellow, pulpy, well defined, centre mortifying.
147	do.	do.	do.	Ireland	Liver	Vicinity	do.	do.	Walnut, green, pulpy, lobulated, well defined.
148	do.	do.	do.	do.	Liver	do.	do.	do.	Cocoonut, yellowish-grey, pulpy, well defined.
149	do.	do.	Poor	do.	Liver, left lobe	Lymphatic gland: hepatic; body of 8th rib	do.	do.	Rugby football, green to yellow, whorled, well defined, thrombi.
150	do.	do.	Fair	do.	do.	—	do.	do.	Hen's egg, green, pulpy, lobulated, well defined.
151	do.	do.	do.	do.	do.	—	do.	Squamous epithelioma	—
152	do.	do.	do.	do.	do.	Vicinity	do.	Adeno-carcinoma	—
153	do.	do.	do.	do.	Rumen, pillar	do.	do.	do.	Cocoonut, yellowish-grey, pulpy, lobulated, well defined, thrombi.
154	do.	do.	Poor	Wigtown-shire	Skin (over left ribs)	—	do.	do.	—
155	do.	do.	Fair	Unknown	Liver, right lobe	Vicinity	do.	Adeno-carcinoma	—

No.	Animal.	Age.	Condition.	Consigned from.	NEOPLASM.			REMARKS. (Size, Colour, Consistency, Margin, etc.)
					Primary.	Secondary.	Classification.	
156	Cow	Aged	Good	Ireland	Rumen, pillar	Lymphatic gland : gastric	Squamous epithelioma	—
157	do.	do.	Poor	do.	Liver, left lobe	Parietal and visceral serous membrane of abdominal cavity : has extended through diaphragm and walls of 1st and 2nd stomach—in latter, formed mass inside; lymphatic glands : hepatic and mediastinal—processes from latter have penetrated the adjacent bronchi and auricle of heart	Adeno-carcinoma	—
158	do.	do.	Good	Scotland	Eye, left	—	Squamous epithelioma	—
159	do.	do.	Fair	Ireland	Liver	Throughout liver	do.	—
160	do.	do.	do.	do.	do.	Vicinity	do.	—
161	do.	do.	Poor	do.	Liver, right lobe	—	do.	—
162	do.	do.	Good	Scotland	do.	Vicinity ; substance of lungs	do.	—
163	do.	do.	Poor	Ireland	do.	Vicinity ; parietal and visceral serous membrane of abdominal cavity ; substance of lungs	do.	—
164	do.	do.	do.	do.	do.	—	do.	—
165	do.	do.	Good	Scotland	Liver, mid lobe	—	do.	—
166	do.	do.	Fair	Ireland	Liver, right & mid lobes	Vicinity	do.	—
167	do.	do.	do.	do.	Liver, mid lobe	—	do.	—
168	do.	do.	do.	do.	Liver, right lobe	—	do.	—
169	do.	do.	do.	do.	do.	—	do.	—
170	do.	do.	do.	do.	Liver	Substance of both lungs	do.	—
171	do.	do.	Poor	do.	Liver, right lobe	Vicinity	do.	—
172	do.	do.	Fair	do.	do.	—	do.	—
173	do.	do.	do.	do.	Liver, left lobe	Throughout liver	do.	—
174	do.	do.	do.	do.	Rumen, pillar	—	Squamous epithelioma	—
175	do.	do.	do.	do.	Liver, right lobe	Throughout liver	Adeno-carcinoma	—
176	do.	do.	do.	do.	Liver	—	do.	—
177	do.	do.	do.	do.	Liver, left lobe	Throughout liver	do.	—

178	do.	do.	do.	do.	Liver, mid lobe	do.	Lymphatic gland : gastric Vicinity	do.	Squamous epithelioma Adeno-carcinoma Carcinoma Round-cell carcinoma	Cocoonant, grey, firm, lobulated, well defined thrombi. — Hen's egg, green, lobulated, well defined. —
179	do.	do.	do.	do.	Rumen, pillar	do.	—	do.	—	—
180	do.	do.	do.	do.	Liver, right lobe	do.	—	do.	—	—
181	do.	do.	do.	do.	Lung, right, centre lobe	do.	—	do.	—	—
182	do.	Poor	do.	do.	Intestine, small	do.	Parietal and visceral serous membrane of abdominal cavity ; lymphatic glands : mesenteric, hepatic, gastric, renal, lumbar, internal iliac, xiphoid, suprasternal, prepectoral ; substance of both lungs	do.	Adeno-carcinoma	Hen's egg, green, pulpy, lobulated, well defined.
183	do.	Fair	do.	do.	Liver, right lobe	do.	Throughout liver	do.	do.	Hen's egg, green, pulpy, lobulated, well defined.
184	do.	Poor	do.	do.	Liver, left lobe	do.	—	do.	Squamous epithelioma	Turkey's egg, , infiltrating surrounding tissue.
185	do.	do.	do.	do.	Rumen	do.	Lymphatic glands : hepatic, bronchial, mediastinal, dorso-costal left 10th, prepectoral right and left, prescapular right, pharyngeal right and left, parotid right, lumbar right and left, precrural left ; suprarenal capsule right ; liver substance	do.	Round-cell sarcoma	—
186	Ox	14 yrs.	do.	do.	Lymphatic glands : mesenteric	do.	Lymphatic glands : mesenteric, hepatic, mediastinal, bronchial, prepectoral left, prescapular left ; liver substance ; lung substance ; parietal and visceral serous membrane of thoracic and abdominal cavities	do.	Round-cell carcinoma	The wall of the intestine was completely involved, almost completely blocking the rumen.
187	Cow	Aged	do.	do.	Ileum, middle	do.	Lymphatic glands : mediastinal, bronchial, cesophageal, prepectoral right and left, suprasternal left ; parietal and visceral serous membrane of thoracic cavity	do.	Adeno-carcinoma	Football, green, pulpy, lobulated, well defined.
188	do.	do.	Fair	do.	Lungs, anterior lobe	Ireland	Vicinity Lymphatic glands : mediastinal, xiphoid right, prepectoral right and left, brachial right and left ; parietal and visceral serous membrane of abdominal cavity ; heart substance	do.	Round-cell carcinoma	Some of the organs were destroyed before examination.
189	do.	do.	Good	do.	Liver, left and mid lobes	Scotland	Vicinity Lymphatic glands : mediastinal, xiphoid right, prepectoral right and left, brachial right and left ; parietal and visceral serous membrane of abdominal cavity ; heart substance	do.	Adeno-carcinoma	Some of the organs were destroyed before examination.
190	do.	Poor	do.	do.	Lung, centre of right	Ireland	Vicinity Lymphatic glands : mediastinal, xiphoid right, prepectoral right and left, brachial right and left ; parietal and visceral serous membrane of abdominal cavity ; heart substance	do.	Round-cell carcinoma	Some of the organs were destroyed before examination.
191	do.	Good	do.	do.	—	Scotland	Vicinity Lymphatic glands : mediastinal, xiphoid right, prepectoral right and left, brachial right and left ; parietal and visceral serous membrane of abdominal cavity ; heart substance	do.	Round-cell carcinoma	Some of the organs were destroyed before examination.
192	do.	Poor	do.	do.	Rumen	Ireland	Vicinity Lymphatic glands : gastric	do.	Squamous epithelioma	Rugby football.
193	do.	Fair	do.	do.	Liver, left lobe	do.	Throughout liver ; lungs substance	do.	Adeno-carcinoma	Pea to hazelnut, green to grey, thrombus in portal vein bursting through into hepatic vein.

No.	Animal.	Age.	Condition.	Consumed from.	NEOPLASM.			REMARKS. (Size, Colour, Consistency, Margin, etc.)
					Primary.	Secondary.	Classification.	
194	Cow	Aged	Poor	Ireland	Liver, left lobe	Lymphatic glands: hepatic; parietal and visceral serous membrane of abdominal cavity in vicinity of liver; liver substance; lung substance, with emboli in blood vessels	Adeno-carcinoma	Green to grey, pulpy, lobulated, well defined, hæmorrhages, thrombi in hepatic and portal veins.
195	do.	do.	Fair	do.	Liver, caudate	—	do.	Grey, soft, lobulated, well defined.
196	do.	do.	do.	do.	Liver, right lobe	—	do.	Yellow, lobulation imperfect, hæmorrhages, well defined.
197	do.	do.	do.	do.	do.	Lymphatic gland: hepatic	do.	Walnut, grey, pulpy, well defined, irregularly crenated.
198	do.	do.	do.	Cork	Liver, left lobe	Vicinity; parietal and visceral serous membrane of abdominal cavity; lymphatic glands: hepatic, internal iliac right and left, prepectoral right and left, suprasternal right and left, œsophageal, mediastinal, bronchial, pericardial, dorso-costal 11th left; lungs substance —	do.	Pumpkin, yellow, pulpy, lobulated, sharply defined, thrombi
199	do.	do.	Good	Ireland	Liver	—	do.	Cocoa-nut, green, pulpy, lobulated, well defined, hæmorrhages.
200	do.	do.	Fair	do.	Liver, right lobe	Vicinity	do.	Man's fist, yellowish-grey, rather firm, lobulated, well defined, degenerated areas.
201	do.	do.	do.	do.	do.	do.	do.	Melon, green, pulpy, lobulated, well defined, hæmorrhages, degenerated areas.
202	do.	do.	do.	do.	Liver	—	do.	Several neoplasms were situated throughout liver. They varied in size from a hazelnut to an orange. All were green, pulpy, well defined, and showed hæmorrhages.
203	do.	do.	do.	do.	Liver, mid lobe	—	do.	Orange, greenish-yellow, pulpy, well defined.
204	do.	do.	do.	do.	do.	—	do.	Cocoa-nut, green, pulpy, lobulated, well defined, hæmorrhages.
205	do.	do.	Poor	do.	Rumen	Lymphatic gland: gastric	Squamous epithelioma	Cucumber.
206	do.	do.	Fair	do.	Liver	—	Adeno-carcinoma	Melon, green, pulpy, lobulated, well defined.
207	Ox	3 yrs.	Good	Scotland	Thymus, thoracic	Vicinity; lymphatic glands: prepectoral, œsophageal	Round-cell sarcoma	Melon, grey, lobulated.
208	Cow	Aged	Poor	Ireland	Liver, right lobe	Vicinity	Adeno-carcinoma	Melon, green, pulpy, lobulated, well defined, thrombi
209	do.	do.	Fair	—	Ovary	—	Mixed-cell sarcoma	30 × 24 × 23 ins., yellow, pulpy.
210	do.	do.	Good	Ireland	Lung, ant. right lobe	Lymphatic glands: mediastinal	Carcinoma	—
211	do.	do.	Fair	do.	Liver, left lobe	Vicinity; lymphatic glands: hepatic, mediastinal, posterior	Adeno-carcinoma	Thrombi.

212	do.	do.	—	Liver	Vicinity do.	do.
213	do.	do.	Ireland	Liver, left lobe	do.	Melon, yellow, fairly firm, lobulated, well defined.
214	do.	do.	do.	do.	do.	Pigeon's egg, green, pulpy, lobulated. Cocoanut, green, pulpy, lobulated, well defined.
215	do.	do.	—	do.	do.	Cocoanut, green, fairly firm, lobulated.
216	do.	Poor	Ireland	Liver	Throughout liver; thrombi in bile ducts; lymphatic glands: hepatic	Liver weighs 62 lbs., green, pulpy, lobulated, hemorrhages, thrombi.
217	do.	Fair	do.	Ovary	Lymphatic glands: hepatic, mediastinal; lungs substance	Melon, grey, cystic, hemorrhages, lobulated.
218	do.	Poor	do.	Liver	Throughout liver; lymphatic glands: hepatic, renal right and left, esophageal, mediastinal, posterior, middle, anterior; lung substance, with emboli in left —	Liver weighs 72 lbs.
219	do.	do.	do.	Thymus, thoracic	Vicinity	Child's head, yellow, soft, lobulated, hemorrhages.
220	do.	Fair	do.	Liver, right lobe	do.	Turkey's egg, grey, pulpy, well defined, thrombi.
221	do.	do.	do.	Liver, mid lobe	do.	Melon, green, pulpy, lobulated, well defined, hemorrhages.
222	do.	do.	do.	Liver, right lobe	do.	Melon, green, pulpy, lobulated, well defined, thrombi.
223	do.	Poor	do.	Liver, left lobe	Throughout liver	Yellow and grey, pulpy, lobulated, well defined, thrombi.
224	do.	Fair	do.	Liver, right lobe	do.	Liver, 70 lbs., green, pulpy, lobulated, hemorrhages.
225	do.	do.	do.	Ileum	do.	Hen's egg, green, pulpy, well defined.
226	do.	do.	do.	Liver, right lobe	do.	do.
227	do.	Poor	do.	do.	Round-cell carcinoma	do.
228	do.	Fair	do.	Ileum	Adeno-carcinoma	do.
229	do.	do.	do.	Liver, right lobe	Carcinoma	Cocoanut, grey, pulpy, lobulated, well defined.
230	do.	do.	do.	Liver, left lobe	do.	Melon, grey, pulpy, lobulated.
231	do.	Poor	do.	Liver, right lobe	do.	Cocoanut, green, pulpy, lobulated, well defined.
232	do.	Fair	do.	Liver, left lobe	Carcinoma	Man's fist, yellow, firm.
233	do.	do.	do.	do.	Adeno-carcinoma	Walnut, green, pulpy, well defined.
234	do.	do.	do.	do.	do.	Melon, green, pulpy, lobulated, thrombi.
235	do.	do.	do.	do.	do.	do.

No.	Animal.	Age.	Condition.	Consigned from.	NEOPLASM.			REMARKS. (Size, Colour, Consistency, Margin, etc.)
					Primary.	Secondary.	Classification.	
236	Cow	Aged	Fair	Ireland	Liver, left lobe	—	Adeno carcinoma	Pigeon's egg, grey, rather firm, lobulated, well defined.
237	do.	do.	do.	Scotland	do.	Throughout liver (pea to hazelnut)	do.	Hen's egg, green, pulpy, well defined.
238	do.	do.	Good	Ireland	Liver, right lobe	—	do.	Cocoonut, green, pulpy, lobulated, well defined.
239	do.	do.	Fair	do.	Liver, left lobe	Throughout liver; lymph gland: hepatic	do.	Hazelnut, grey, pulpy, hæmorrhages.
240	do.	do.	do.	do.	Liver, right lobe	Substance of both lungs; lymph glands: hepatic, posterior mediastinal	do.	Child's head, grey, pulpy, well defined, thrombi.
241	do.	do.	Poor	do.	Liver	—	Mixed-cell sarcoma	24 × 24 × 18 ins., yellowish-grey, firm.
242	do.	do.	Fair	do.	Liver, left lobe	—	Adeno-carcinoma	Man's head, green, rather firm, lobulated, well defined.
243	do.	do.	do.	do.	Liver, left and mid lobes	Throughout liver	do.	Man's head, green, pulpy, lobulated, well defined, thrombi.
244	do.	do.	Poor	do.	do.	Throughout liver: right lobe; substance of both lungs	do.	Man's head, grey-yellow, rather firm, lobulated, well defined, thrombi.
245	do.	do.	Fair	do.	Liver, right lobe	Vicinity; (had penetrated wall of gall-bladder and formed growth in lumen)	do.	Melon, green, pulpy, lobulated, well defined, hæmorrhages.
246	do.	do.	do.	do.	Liver, left lobe	Lymphatic glands: hepatic, mediastinal, posterior and middle; substance both lungs	do.	Man's head, yellow-brown, pulpy, lobulated, well defined, thrombi.
247	do.	do.	do.	do.	Bowel, small	Vicinity; lymph gland: mesenteric; substance of liver	Carcinoma (acinous)	Walnut, lumen constricted, mesenteric size cocoonut.
248	do.	do.	do.	Scotland	Liver, right lobe	—	Adeno-carcinoma	Man's fist, yellowish, pulpy, lobulated, well defined, hæmorrhages.
249	do.	do.	do.	Ireland	Liver, left lobe	Throughout liver	do.	Cocoonut, green, pulpy.
250	do.	do.	do.	do.	Liver, right lobe	—	do.	Man's head, green, pulpy, lobulated, well defined.
251	do.	do.	Poor	do.	Rumen	Throughout liver; parietal and visceral serous membrane of abdominal cavity in vicinity of liver; lymphatic glands: hepatic, gastric, mediastinal, posterior, middle, anterior, xiphoid	Squamous epithelioma	Hen's egg, surface ulcerated, infiltrating.
252	do.	do.	Fair	do.	Liver, left lobe	right and left; substance of both lungs; at each end of the 3rd intercostal space is a tumour about the size of a man's hand, which through pressure has caused absorption of the adjacent sternum and dorsal vertebrae	Adeno-carcinoma	Man's head, yellow-grey, pulpy, lobulated well defined, thrombi.

253	do.	Poor	do.	Liver, right lobe	—	do.	Mc-lon, green, pulpy, well defined, hæmorrhages, thrombi.
254	do.	do.	do.	Liver, left, mid, and right	Adhering to diaphragm	do.	— green, pulpy, well defined, hæmorrhages, thrombi.
255	do.	Fair	do.	Salivary gland (?)	—	Mixed-cell sarcoma	Man's head, yellow-grey, pulpy (extravasation).
256	do.	Good	Unknown	Lung, right	Vicinity	Round-cell carcinoma	Cocoonut.
257	do.	Fair	Ireland	Liver	—	Adeno-carcinoma	—
258	do.	do.	do.	Liver, left lobe	—	do.	Pigeon's egg, green, pulpy, lobulated, well defined.
259	do.	do.	do.	do.	Throughout liver	do.	{ (1) Cocoonut, green, pulpy, well defined.
260	do.	Good	Unknown	Liver, mid lobe	—	do.	{ (2) Hen's egg, green, pulpy, well defined.
261	do.	Fair	Scotland	Liver	—	do.	Pumpkin, green, pulpy, lobulated, well defined, hæmorrhages.
262	do.	do.	Ireland	Thymus, thoracic	—	Mixed-cell sarcoma	Pea to hen's egg, green, pulpy, well defined.
263	do.	do.	do.	—	Parietal serous membrane of chest cavity; lymphatic gland: prepectoral, suprasternal, xiphoids, dorso-costals	Round-cell sarcoma	Child's head, yellow, pulpy, lobulated.
264	do.	do.	Scotland	Rumen	Lymphatic glands: gastric, posterior mediastinal; substance of both lungs	Squamous epithelioma	15 x 9 ins.
265	do.	Good	do.	Liver, right lobe	Vicinity	Adeno-carcinoma	Cocoonut, green, pulpy, lobulated, well defined.
266	do.	Poor	Ireland	Liver, left lobe	do.	do.	Child's head, green, pulpy, hæmorrhages, well defined, thrombi.
267	do.	do.	do.	Liver, right lobe	Throughout liver	do.	Football, green, pulpy, lobulated, well defined.
268	do.	do.	do.	Liver, left lobe	Throughout liver: parietal and visceral serous membrane in vicinity of liver; lungs substance	do.	Child's head, green to yellow, pulpy, lobulated, hæmorrhages, thrombi.
269	do.	do.	do.	Liver, right lobe	Throughout liver; lymphatic glands: hepatic	do.	Cocoonut, green to grey, pulpy, lobulated, well defined, hæmorrhages, thrombi.
270	do.	Fair	do.	Liver, left lobe	—	do.	Orange, green, pulpy, well defined, hæmorrhages.
271	do.	do.	do.	do.	Vicinity; lymphatic glands; hepatic, posterior mediastinal	do.	Child's head, grey, pulpy, lobulated, well defined, hæmorrhages, thrombi.
272	do.	Poor	do.	{ Vulva	—	Squamous epithelioma	Orange, grey, firm, well defined, centre gangrene, skin superficially ulcerated.
273	do.	do.	do.	{ Thymus, thoracic	—	Mixed-cell sarcoma	Orange, grey, fairly firm, imperfectly lobulated, well defined, hæmorrhages, cystic.
274	do.	do.	do.	Liver, right lobe	Vicinity	Adeno-carcinoma	Football, grey, pulpy, lobulated, well defined, hæmorrhages, thrombi.
275	do.	do.	do.	Liver, left lobe	do.	do.	Football, green, pulpy, lobulated, well defined, hæmorrhages, thrombi, centre gangrene.
276	do.	Fair	do.	Liver, mid lobe	—	do.	Cocoonut, green, pulpy, lobulated, well defined, hæmorrhages, thrombi.
277	do.	do.	do.	Lymphatic gland, tracheal	—	Alveolar round-cell sarcoma	Hen's egg, yellowish-grey, firm, lobulated, well defined, hæmorrhages, cystic.
277	do.	Poor	do.	Liver, right lobe	—	Adeno-carcinoma	Cocoonut, green, pulpy, well defined, hæmorrhages.

No.	Animal.	Age.	Condition.	Consumed from.	NEOPLASM.			REMARKS. (Size, Colour, Consistency, Margin, etc.)
					Primary.	Secondary.	Classification.	
278	Cow	Aged	Poor	Ireland	Liver, left lobe	—	Adeno-carcinoma	Vegetable marrow, green, pulpy, well defined, thrombi.
279	do.	do.	Fair	do.	Liver, mid lobe	—	do.	Cocoonut, green, pulpy, well defined, hæmorrhages.
280	do.	do.	do.	do.	do.	Vicinity	do.	Cocoonut, green, pulpy, lobulated, well defined, hæmorrhages.
281	do.	do.	do.	do.	Liver	—	do.	Pea to Tangerine orange, green to brown, well defined.
282	do.	do.	Poor	do.	Liver, right	—	do.	Child's head, green, well defined, gangrene.
283	do.	do.	Fair	do.	Eye	Adjacent tissues	Squamous epithelioma	Hen's egg, eyeball destroyed, spread by contact to eyelid.
284	do.	do.	do.	Scotland	Fascia	Substance of apex of both lungs; lymphatic glands: supra-sternal right, prepectoral right	Spindle-cell sarcoma	—
285	do.	do.	do.	Ireland	Liver, right lobe	Throughout	Adeno-carcinoma	Cocoonut, yellow, fairly firm, well defined, lobulated.
286	do.	do.	do.	do.	do.	do.	do.	Hen's egg, green, pulpy, well defined, lobulated, blood extravasations, degenerated areas.
287	do.	do.	do.	Scotland	Liver, caudate lobe	—	do.	Small hen's egg, greenish, pulpy, well defined, lobulated.
288	do.	do.	do.	Ireland	Liver, mid lobe	Lymphatic glands: hepatic; throughout liver	Scirrhus cancer	Melon, grey, hard, fibrous, well defined.
289	do.	do.	Poor	Scotland	Eye	Substance of both lungs; lymph glands: parotid left, bronchial	Squamous epithelioma	Infiltrating adjacent sinuses, abscess in brain due to pyogenic organism.
290	do.	do.	Fair	Ireland	Liver, left lobe	Vicinity	Adeno-carcinoma	Hen's egg, green, fairly firm, lobulated, well defined, hæmorrhages.
291	do.	do.	do.	do.	do.	Throughout	do.	Hand, green, fairly firm, lobulated, irregular.
292	do.	do.	do.	do.	Rumen	Vicinity; lymph gland: gastric	Squamous epithelioma	Child's head, brown surface, ulcerated edges overhanging.
293	do.	do.	do.	do.	Liver, left lobe	Lymph gland: hepatic; parietal serous membrane of abdominal cavity	Adeno-carcinoma	Football, various, pulpy, well defined, hæmorrhages, thrombi.
294	do.	do.	Poor	do.	Rumen	Lymph glands: gastric	Squamous epithelioma	Man's hand, ulcerated, hard.
295	do.	do.	do.	do.	Liver, left lobe	—	Adeno-carcinoma	Orange, green, pulpy, well defined.
296	do.	do.	do.	do.	do.	—	do.	Hen's egg, green, pulpy, well defined.
297	do.	do.	Fair	do.	Thymus, thoracic	Parietal and visceral serous membrane in vicinity	Round-cell sarcoma	Orange, greyish-brown, fairly firm, lobulated, well defined.
298	do.	do.	do.	do.	Liver, left lobe	Vicinity	Adeno-carcinoma	Hen's egg, grey, fairly firm, lobulated, well defined, thrombus.
299	do.	do.	do.	do.	Liver, right lobe	—	do.	Walnut, grey, fairly firm, lobulated, well defined.
300	do.	do.	Poor	do.	do.	Vicinity	do.	Walnut, green, grey, fairly firm, lobulated, well defined.