

TABLE 1 - Details of the 80 postmortem cases

No.	Breed	Age	Sex	Number of feet dissected	Cartilage Studied Histopathologically	Pathological Changes
1	Thoroughbred	5 M.F.	M.	All	Whole foot	None
2	Hunter x Arab	7½ M.F.	M.	"		
3	Exmoor pony	8 M.F.	M.	"		
4	Exmoor pony	9 M.F.	F.	"	NFM	None
5	Exmoor pony	10 M.F.	F.	"	OFL	None
6	Thoroughbred	10 M.F.	M.	"	OFM	None
7	Thoroughbred	11 M.F.	F.	"	NFL	None
8	Thoroughbred	11 M.F.	F.	"	NFL	None
9	Thoroughbred	11 M.F.	M.	"		
10	Thoroughbred	1D.	M.	"		
11	Riding pony (heavyweight)	2D.	M	"	OFL	None
12	Thoroughbred (Arab)	2D.	M.	"	NHL	None
13	Thoroughbred	14D	M.	"	NHM	None
14	Thoroughbred	1½M	M	"	NFM	None
15	Highland pony	2M	M.	"		
16	Thoroughbred	2M	M.	"	OFL	None



Table 1.

No.	Breed	Age	Sex	Number of feet dissected	Cartilage Studied Histopathologically	Pathological Changes
17	Thoroughbred	5 M.	M.	All		
18	Thoroughbred	6 M.	M.	"	NFL and OHL	None
19	Thoroughbred x Connemara	6 M.	M.	"	NFM	None
20	Exmoor pony	7 M.	M.	"	OFM	None
21	Exmoor pony	7 M.	M.	"		
22	Exmoor pony	8 M.	M.	"	OHM	None
23	Thoroughbred	8 M.	M.	"	NHM and L	None
24	Hunter x Thoroughbred	1 Y.	F.	"		
25	Welsh pony	1½ Y.	F.	NF, NH and OH		
26	Thoroughbred	2 Y.	M.	All	OFM	None
27	Thoroughbred	2 Y.	G.	"	OHL	None
28	Thoroughbred	2 Y.	F.	"		
29	Thoroughbred x Arab	2½ Y.	F.	"		
30	Thoroughbred	3 Y.	G.	"	OFM and L	None
31	Thoroughbred	3 Y.	F.	"		
32	Thoroughbred	3 Y.	G.	"		

Table 1.

No.	Breed	Age	Sex	Number of feet dissected	Cartilage Studied Histopathologically	Pathological Changes
33	Thoroughbred	3 Y	F.	All		
34	Hunter (lightweight)	3 Y	G.	"	OFM	Calcification
35	Thoroughbred	3½ Y	G.	"		
36	Riding pony (lightweight)	4 Y	G.	"		
37	Shetland pony	4 Y	M.	"	OFL	None
38	Welsh x Exmoor	4 Y	G.	"	OFM and L	None
39	Heavy horse	4 Y	G.	"	OFM and NFM	Calcification and necrosis
40	Welsh pony	4 Y	G.	"	OFM	None
41	Thoroughbred	5 Y	G.	NF, OF and OH		
42	Thoroughbred	5 Y	G.	All	OFL	Calcification and necrosis
43	Riding pony (lightweight)	6 Y	G.	"		
44	Thoroughbred	6 Y	F.	"	OFM	Calcification and necrosis
45	Welsh pony	7 Y	G.	"	OHM	Calcification and necrosis
46	Welsh pony	7 Y	G.	"	NFM and OHM	Calcification

Table 1.

No.	Breed	Age	Sex	Number of feet dissected	Cartilage Studied Histopathologically	Pathological Changes
47	Welsh x Exmoor pony	7 Y.	F.	All		
48	Riding pony (lightweight)	7 Y.	M.	"		
49	Shetland pony	7 Y	G.	"	NFM	Calcification
50	Thoroughbred	7 Y	G.	"	OHL	Calcification and necrosis
51	Thoroughbred	7 Y	G.	"		
52	Highland pony	7 Y	G.	"	NFM and OFL	Calcification and necrosis
53	Thoroughbred	8 Y	F.	"		
54	Thoroughbred	8 Y	G.	NF and OF		
55	Exmoor pony	10 Y	F.	All	OFL	Calcification and necrosis
56	Welsh cob	10 Y	G.	"	OHL	Calcification and necrosis
57	Hunter (lightweight)	12 Y	G.	"		
58	Riding pony (lightweight)	12 Y	G.	"		
59	Shetland pony	12 Y	F.	"	NFM and NHL	Calcification
60	Hunter (lightweight)	13 Y	G.	"		
61	Thoroughbred	13 Y	G.	"	OFL	Calcification and necrosis

Table 1.

No.	Breed	Age	Sex	Number of feet dissected	Cartilage Studied Histopathologically	Pathological Changes
62	Hunter (lightweight)	14 Y.	G.	All		
63	Hunter (heavyweight)	14 Y	F.	NF and OF	OFM	Calcification
64	Heavy horse	15 Y	G.	All	OFM	Calcification and necrosis
65	Shetland pony	15 Y	G.	"	NHL and OHL	Calcification and necrosis
66	Thoroughbred	15 Y	G.	"	NFM	Calcification and necrosis
67	Exmoor pony	16 Y	F.	"	NHM	Calcification and necrosis
68	Thoroughbred	16 Y	F.	"	"	
69	Hunter (lightweight)	16 Y	G.	"	NFL and NHM	Calcification and necrosis
70	Heavy horse	17 Y	G.	"	NFM	Calcification
71	Heavy horse	17 Y	G.	"	NFM and OFL	Calcification and necrosis
72	Shetland pony	17 Y	M.	"	OFM and OHL	Calcification
73	Riding pony (heavyweight)	20 Y	G.	"	"	

Table 1.

No.	Breed	Age	Sex	Number of feet dissected	Cartilage Studied Histopathologically	Pathological Changes
74	Heavy horse	20 Y.	F.	All	NFL	Calcification and necrosis
75	Hunter (lightweight)	20 Y.	F.	"	NFM	Calcification and necrosis
76	Hunter (lightweight)	20 Y.	F.	"	NHM	Calcification
77	Fell pony	20 Y.	F.	"	OFL	Calcification and necrosis
78	Hunter (lightweight)	23 Y.	G.	"	OFM	Calcification and necrosis
79	Hunter (lightweight)	23 Y.	G.	"		
80	Shetland pony	23 Y.	G.	"	OHM	Calcification

TABLE 2 - Records the presence of a foramen (-) and foramen plus bony band (+) in the dissected cartilages of the 44 equines aged 2 years and onward.

Side Bone	Case number = Post mortem number (Table 1)																																													
	27	28	29	30	31	33	34	35	36	39	40	41	42	43	44	45	46	47	48	50	51	52	53	54	56	57	60	61	62	63	64	65	66	67	68	70	71	73	74	75	76	77	78	79		
NFM	-	+	-	+		-	+	+	-	-	-	-	-	-	+				-					-	-		+	-	-	-				-	-	+	-	-	+	+	-	-	-	+		
NFL		+			-		+	+		-		-	-		-	-	-		-	-	-	+		-	-	+	+		-		+	+	+	+	-	+	-	-	+	+	-	-	-	-	+	
OFM	-	-	-	-		-	-	+	+	-		-	-		-	-			+		+		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	+	-	-	-		
OFL		-					-		+	-		-	-	+	-	-	-		+	+	+	-		-	-	-	-	-	-	-	-	-	-	-	+	-	+	-		+	+	-	-	+		
NHM		+			-		-		-			-	+		+				-		+		-	-	-	-	-	-	-	-	-	+	-	+		+	-	-	-	+		+	+	+	+	
NHL			-				+		-	-							-			+				-	-		-	-		-	+	-	-	+	-	+		+	-	+	+	+	+	+	+	
OHM		-	-				-		-		-	-							-	-	-	+	-	-	-	-	-	-	-	-	-	+		-		+	-	-	+	-	-	+		+	+	+
OHL	-	-					-		-						+	-	-					-			-	-		-	-	-	+	+	+	-	+	-	+				+	+	+	+	+	+

TABLE 3 - Type of equines examined between 1963 - 1970 radiographically.

Type of equine	Number	Percentage of Total
Shetland pony	22	4.0
Exmoor pony	16	3.0
Welsh pony	15	2.8
Welsh cob	3	.6
Welsh cross	13	2.3
Iceland pony	1	.1
Fell pony	2	.3
Highland pony	9	1.7
Miscellaneous pony (riding)	46	8.4
Trotter	16	3.0
Thoroughbred cross	40	7.3
Thoroughbred horses	221	40.3
Hunter type horses	131	23.9
Miscellaneous heavy horses	13	2.3
Total	548	100%

TABLE 4 - Records details of the feet of the 31 horses which were examined radiologically and showed bony islands.

No.	Breed	Age	Sex	Cartilage
1	Welsh cob	2 Y.	M	NFM
2	Exmoor pony	3 Y.	G.	NFM and OFM
3	Thoroughbred	3 Y.	G.	OFM
4	Thoroughbred	3 Y.	F.	OFL
5	Clydesdale	3 Y.	G.	NFL, OFM and OFL
6	Clydesdale	4 Y.	F.	NFM and L, OFM and L
7	Hunter (lightweight)	4 Y.	F.	OHM
8	Thoroughbred cross	6 Y.	G.	NFL
9	Thoroughbred (Arab)	6 Y.	G.	NHM and OHM
10	Thoroughbred	6 Y	G.	OFM
11	Thoroughbred	6 Y	F.	OFL
12	Clydesdale	6 Y	G.	NFM
13	Thoroughbred	7 Y	G.	NFM
14	Hunter (heavyweight)	7 Y	G.	NFL, OFM and NHM

No.	Breed	Age	Sex	Cartilage
15	Thoroughbred cross	7 Y.	G.	NFM
16	Thoroughbred	8 Y.	F.	OFL
17	Hunter (lightweight)	9 Y.	G.	NFM and OFM
18	Hunter (lightweight)	9 Y.	G.	OFM
19	Hunter (lightweight)	9 Y.	M.	NFM
20	Hunter (lightweight)	9 Y.	F.	OFM
21	Hunter (lightweight)	9 Y.	G.	NFM and OFM
22	Hunter (heavyweight)	9 Y.	G.	NFL and OFL
23	Hunter (heavyweight)	10 Y.	G.	OFM
24	Hunter (heavyweight)	10 Y.	G.	NFL
25	Hunter (lightweight)	11 Y.	F.	OFM
26	Riding pony (heavyweight)	12 Y.	G.	NFL, NFM and OHL
27	Hunter (lightweight)	12 Y.	G.	OFM
28	Hunter (heavyweight)	12 Y.	G.	NFL
29	British percheron	16 Y.	G.	NFM, NFL, OFM and OFL
30	Hunter (lightweight)	18 Y.	F.	NFL
31	Hunter (heavyweight)	23 Y.	F.	NFM

TABLE 5 - Shows the location and the size of the bony islands in the cartilage of the hoof which were found on P.M. cases after dissecting the foot.

No.	Breed	Age	Sex	Lateral measurement
1	Heavy	4 Y	G.	<p>A) NFM - At 6.0 mm distant from the end of side bone a bony island of (17.0 x 11.5) mm.</p> <p>B) NFL - At 0.2 mm distant from the end of side bone a bony island of (41.0 x 31.0) mm.</p> <p>C) OFM - At 7.5 mm distant from the end of side bone a bony island of (38.0 x 39.0) mm.</p> <p>D) OFL - Connected with side bone a bony island of (44.0 x 44.0) mm.</p> <p>E) NHL - At 2.0 mm distant from the end of side bone a bony island of (23.0 x 15.0) mm.</p> <p>F) OHL - At 4.0 mm distant from the end of side bone a bony island of (8.0 x 7.5) mm plus three bony spots which make it look like a bony island of (13.5 x 7.5) mm.</p> <p>G) OHEM - Spotty islands scattered at different parts of the cartilage plate.</p>
2	Thoroughbred	5 Y	G	<p>A) NFM - At 1.5 mm distant from the end of side bone a bony island of (23.0 x 17.0) mm.</p> <p>B) NFL - Fractured side bone, looks like a bony island.</p> <p>C) OFM - At 1.5 mm distant from the end of side bone a bony island of (15.5 x 13.5) mm.</p>

No.	Breed	Age Sex	Lateral measurement
3	Thoroughbred	7 Y G	<p>D) OFL - At 0.5 mm distant from the end of side bone a bony island of (25.0 x 20.5) mm.</p> <p>E) NHM - At 8.0 mm distant from the end of side bone a bony island of (9.5 x 8.5) mm.</p> <p>F) OHM - Four spotty islands scattered at different parts of the cartilage plate.</p> <p>A) OFM and L - Spotty islands scattered at different parts of the cartilage plate.</p> <p>B) OHM and L - Spotty islands scattered at different parts of the cartilage plate</p>
4	Welsh pony	7 Y G	<p>OHM -</p> <p>a) At 7.5 mm distant from the end of side bone a bony island of (1.0 x 1.0) mm.</p> <p>b) At 14.0 mm anterior to the first island and at 7.5 mm above side bone, a bony island of (2.5 x 1.0) mm.</p>
5	Welsh cob	10 Y G	<p>A) NFM -</p> <p>a) At 5.0 mm distant from the end of side bone a bony island of (10.0 x 3.0) mm.</p> <p>b) At 3.0 mm posterior to (a), a bony island of (1.0 x 1.0) mm.</p> <p>B) NHM - At 5.0 mm above side bone a bony island of (1.0 x 1.0) mm.</p> <p>C) OHL - At 3.0 mm distant from the end of side bone a bony island of (3.0 x 3.0) mm.</p>

No.	Breed	Age	Sex	Lateral Measurement
6	Exmoor pony	10 Y	F	OFL - At 1.5 mm distant from the end of side bone a bony island of (15.0 x 14.5) mm.
7	Shetland pony	12 Y	F	A) NFL - At 3.0 mm distant from the end of side bone a bony island of (3.5 x 1.0) mm plus 4 spotty islands scattered at different parts of the cartilage plate. B) NHL - At 9.0 mm distant from the end of side bone a bony island of (1.0 x 1.0) mm plus three spotty islands scattered at different parts of the cartilage plate.
8	Shetland pony	15 Y	F	C) OHL - At the middle of the caudal border of the cartilage, a bony island of (3.0 x 1.0) mm. D) OHM - Three spotty islands scattered at different parts of the cartilage plate.
9	Heavy	15 Y	G	All cartilages show spotty islands at different parts of the cartilage plate. NFL - Mounting side bone, a bony island of (1.5 x 6.0) mm.
10	Heavy	17 Y	G	A) NFM - a) Mounting side bone, a bony island of (17.0 x 18.0) mm. b) At 14.0 mm above side bone, a bony island of (13.0 x 8.5) mm plus 4 spotty islands anteriorly. c) At 8.5 mm distant, anterior to (b), three joined bony islands of (4.0 x 6.0), (4.0 x 7.0) and (2.5 x 4.0) mm plus three spotty islands around them. d) At the middle of the cartilage plate there are three spotty islands.

No.	Breed	Age Sex	Lateral measurement
			<p>B) NFL -</p> <p>a) At 1.0 mm distant from the end of side bone, a bony island of (9.5 x 7.0) mm.</p> <p>b) At 9.0 mm distant above (a) a bony island of (18.5 x 12.0) mm plus five spotty islands between (a) and (b).</p> <p>c) At 15.0 mm above (b), a bony island of (11.0 x 6.0) mm.</p> <p>d) At 0.5 mm above (c), a bony island of (4.0 x 6.0) mm plus two spotty islands between (c) and (d).</p> <p>e) At 0.5 mm above (d), a bony island of (7.0 x 7.0) mm plus two spotty islands above it.</p> <p>C) OFL -</p> <p>a) At 8.0 mm distant from side bone, a bony island of (12.5 x 8.5) mm plus three spotty islands posteriorly.</p> <p>b) At 2.0 mm above (a), a bony island of (5.0 x 4.0) mm.</p> <p>c) At 8.5 mm above (b), a bony island of (3.5 x 1.5) mm plus two spotty islands between (b) and (c).</p> <p>d) At 4.0 mm above (c), a bony island of (3.5 x 6.0) mm plus three spotty islands posteriorly.</p> <p>D) NHL -</p> <p>a) At 6.0 mm distant from side bone, a bony island of (16.5 x 9.0) mm plus four spotty islands.</p> <p>b) At 1.0 mm from (a), a bony island of (7.0 x 5.0) mm plus three spotty islands at the proximal border of (b).</p>

No.	Breed	Age	Sex	Lateral measurement
				<p>c) At 3.5 mm from (b), a bony island of (3.5 x 8.0) mm.</p>
				<p>E) OHM -</p>
				<p>a) At 9.0 mm distant from side bone, a bony island of (4.0 x 2.0) mm plus six bony islands above.</p>
				<p>b) At 10.5 mm distant from (a), a bony island of (5.5 x 5.5) mm.</p>
				<p>c) At 0.5 mm distant from (b), a bony island of (3.5 x 6.5) mm plus a spotty island posteriorly.</p>
				<p>F) OHL - At 12.0 mm distant from side bone, a bony island of (20.0 x 22.5) mm plus ten spotty islands around it.</p>
11	Riding pony (heavyweight)	20 Y	G	<p>NFL - Two spotty islands scattered at different parts of the cartilage plate.</p>
12	Hunter (lightweight)	20 Y	F	<p>NEM and NFL - Spotty islands scattered at different parts of the cartilages plate.</p>
13	Hunter (lightweight)	20 Y	F	<p>All cartilages show spotty islands scattered at different parts of the cartilages.</p>
14	Fell pony	20 Y	F	<p>A) NFL - At 2.0 mm distant from side bone, a bony island of (7.5 x 4.0) mm the 2.0 mm space is filled with six spotty islands which gave the mounting looking in the A.P. exposure.</p>
				<p>B) NEM - At 15.0 mm distant from side bone, a bony island of (3.5 x 2.0) mm plus spotty islands scattered at different parts of the cartilage plate.</p>

No.	Breed	Age	Sex	Lateral measurement
15	Heavy	20 Y	F	<p>C) OFL - At 2.0 mm distant from side bone, a bony island of (3.5 x 6.5) mm plus spotty islands scattered at different parts of the cartilage plate.</p> <p>D) OFM - At 5.5 mm distant from side bone, a bony island of (5.5 x 4.5) mm plus a spotty island at its distal border.</p> <p>A) NFM - At 10.0 mm above side bone, seven spotty islands, plus six spotty islands mounting side bone.</p> <p>B) NFL -  a) At 6.5 mm distant from side bone, a bony island of (4.5 x 4.5) mm.  b) At 1.0 mm posterior to (a), a bony island of (6.0 x 8.5) mm.  c) At 3.0 mm posterior to (b), a bony island of (1.0 x 1.5) mm.</p> <p>C) OFM - At 0.5 mm distant from side bone, a bony island of (5.5 x 3.0) mm plus two spotty islands posteriorly.</p> <p>D) OFL - At 7.0 mm distant from side bone, a bony island of (4.0 x 3.0) mm plus four spotty islands mounting side bone.</p> <p>E) OHL - At 6.0, 12.5 and 14.0 mm distant from side bone, there are three spotty islands.</p>

No.	Breed	Age	Sex	Lateral measurement
16	Hunter (lightweight)	23 Y	G	NFL - At 0.5 mm above side bone, a bony island of (2.5 x 1.0) mm.
17	Hunter (lightweight)	23 Y	G	<p>A) OFM - Shows spotty islands scattered at different parts of the cartilage plate.</p> <p>B) OFL - At 0.5 mm distant from the distal border of side bone, a bony island of (1.5 x 2.0) mm plus spotty islands scattered at different parts of the cartilage plate.</p> <p>C) NHM - Shows spotty islands scattered at different parts of the cartilage plate.</p> <p>D) OHL - Shows spotty islands scattered at different parts of the cartilage plate.</p>

TABLE 6 - Shows the location and the size of the bony islands, at the level of the distal palmar process of PIII, which were found on postmortem cases after dissecting the foot.

No.	Breed	Age	Sex	Lateral measurement of the island
1	Thoroughbred x hunter	1 Y	F	A) NHL - With slight separation from the distal palmar process, a bony island of (5.0 x 6.0) mm. B) OHL - With slight connection with the distal palmar process, a bony island of (7.0 x 4.0) mm.
2	Welsh pony	1½ Y	F	OFL - Connected with the distal palmar process, a bony island of (2.5 x 1.5) mm.
3	Thoroughbred	3 Y	G	OHM - At 0.2 mm distant from the distal palmar process, a bony island of (3.0 x 1.5) mm.
4	Hunter (lightweight)	3 Y	G	A) OHM - With slight separation from the distal palmar process, a bony island of (2.0 x 3.0) mm. B) OHL - With slight separation from the distal palmar process, a bony island of (1.0 x 3.0) mm.
5	Thoroughbred	3½ Y	G	NFM - Connected with the distal palmar process, a bony island of (3.0 x 2.0) mm.
6	Shetland pony	4 Y	M	OFL - With slight separation from the distal palmar process, a bony island of (1.0 x 1.0) mm.
7	Welsh cross	4 Y	G	OFL - At 0.5 mm distant from the distal palmar process, a bony island of (2.5 x 4.0) mm.
8	Riding pony (lightweight)	4 Y	G	NHM - At 0.5 mm distant from the distal palmar process, a bony island of (2.0 x 1.0) mm.
9	Hunter (lightweight)	4 Y	F	NHM - At 0.5 mm distant from the distal palmar process, a bony island of (3.0 x 2.0) mm.

No.	Breed	Age	Sex	Lateral measurement of the island
10	Heavy	4 Y	G	OFM - At 1.0 mm distant from the distal palmar process, a bony island of (2.5 x 1.0) mm.
11	Highland pony	7 Y	G	A) OFL - At 0.5 mm distant from the distal palmar process, a bony island of (3.0 x 2.5) mm. B) OHL - At 0.5 mm distant from the distal plantar process, a bony island of (3.5 x 3.0) mm.
12	Thoroughbred	8 Y	G	OFL - With direct connection with the distal palmar process, a bony island of (1.0 x 1.0) mm.
13	Hunter (lightweight)	12 Y	G	A) OHM - With slight separation from the distal plantar process, a bony island of (5.0 x 4.0) mm. B) OHL - With slight separation from the distal plantar process, a bony island of (5.0 x 4.0) mm.
14	Thoroughbred	13 Y	G	NHM - With slight separation from the distal plantar process, a bony island of (4.0 x 3.0) mm.
15	Thoroughbred	15 Y	G	NFM - At 2.0 mm distant from the distal palmar process, a bony island of (2.0 x 1.5) mm.
16	Exmoor pony	16 Y	F	NHM - At 1.0 mm distant from the distal plantar process, a bony island of (3.5 x 2.5) mm.
17	Hunter (lightweight)	16 Y	G	NHM - At 2.5 mm distant from the distal plantar process, a bony island of (1.5 x 1.0) mm.

No.	Breed	Age	Sex	Lateral measurement of the island
18	Shetland pony	17 Y	F	<p>A) OFL - At 1.5 mm distant from the distal palmar process, a bony island of (1.5 x 1.5) mm.</p> <p>B) OHM - At 1.0 mm distant from the distal plantar process, a bony island of (1.5 x 2.5) mm.</p> <p>C) OHL - At 0.2 mm distant from the distal plantar process, two separated bony islands of (1.5 x 2.0) and (1.0 x 2.0) mm.</p>
19	Heavy horse	17 Y	G	NFL - At 0.5 mm distant from the distal palmar process, a bony island of (2.5 x 2.5) mm.
20	Heavy horse	17 Y	G	<p>A) NFM - At 3.0 mm distant from the distal palmar process, a bony island of (10.0 x 5.5) mm.</p> <p>B) OHM - At 2.5 mm distant from the distal plantar process, a bony island of (12.0 x 3.0) mm.</p>
21	Riding pony (heavyweight)	20 Y	G	NFL - At 2.5 mm distant from the distal palmar process, a bony island of (6.0 x 6.0) mm.
22	Fell pony	20 Y	F	NFL - At 0.5 mm distant from the distal palmar process, a bony island of (1.5 x 1.0) mm.
23	Hunter (lightweight)	20 Y	F	NFL - At 1.0 mm distant from the distal palmar process, a bony island of (1.5 x 2.0) mm.
24	Heavy horse	20 Y	F	<p>A) NFL - At 0.5 mm distant from the distal palmar process, two bony islands of (5.5 x 3.0) and (2.0 x 1.0) mm.</p> <p>B) OFL - At 1.0 mm distant from the distal palmar process, a bony island of (7.5 x 7.0) mm.</p>

TABLE 7 - Ash, Calcium, Magnesium and Phosphorus as a percentage of dry fat free bone in B1 and B2

Breed	Sex	Age (yr.)	Site	B1 (side bone)				B2 (PIII)			
				Ash	Ca	Mg	P	Ash	Ca	Mg	P
Thoroughbred x hunter	F	1	NFM	50.47	19.88	0.250	8.58	53.34	20.84	0.241	8.89
Welsh pony	F	1½	NHM	51.10	20.32	0.190	8.51	56.03	22.14	0.192	9.31
Thoroughbred	F	2	NHL	50.83	22.02	0.239	8.34	54.60	20.72	0.238	8.97
Arab x thoroughbred	F	2½	NFL	53.29	21.13	0.231	9.14	54.62	21.24	0.207	9.21
Thoroughbred	G	3	NHM	51.81	20.24	0.203	8.27	54.79	22.49	0.195	8.92
Thoroughbred	G	3½	OHM	52.61	20.21	0.237	8.90	55.15	21.92	0.217	9.15
Pony	G	4	NHL	51.93	21.36	0.218	9.92	54.06	22.21	0.204	8.60
Thoroughbred	G	5	OHM	51.35	21.11	0.216	8.09	56.16	22.19	0.193	9.09
Pony	G	6	NHM	51.51	20.56	0.215	7.95	57.91	22.38	0.217	9.45
Pony	M	7	NHM	48.25	19.62	0.221	8.20	52.51	22.85	0.212	8.71
Welsh pony	F	7	NHM	53.64	22.63	0.226	8.87	59.01	23.24	0.218	9.78
Thoroughbred	F	8	OFL	53.75	21.68	0.230	8.58	57.73	22.73	0.222	9.68
Pony	G	12	NFL	52.43	21.37	0.213	8.27	56.83	21.98	0.191	8.90
Hunter	G	12	NHM	52.27	21.99	0.176	8.62	57.82	23.22	0.176	9.50
Pony	G	20	NHM	50.83	20.39	0.212	8.03	55.02	21.61	0.197	8.74
Hunter	G	23	OFL	53.92	21.48	0.178	8.73	55.89	21.54	0.198	9.28
		Mean		51.87	21.00	0.2160	8.53	55.72	22.09	0.2074	9.14
		± S.Error		± 0.366				± 0.450			

TABLE 8 - Comparison between Mean Values of Analytical Results given in Table 7.

	B1 (side bone)	B2 (PIII)	Mean difference (B2 - B1)	+ S.E. of difference	Statistical Analysis
Ash %	51.87	55.72	+ 3.85	± 0.357	P < 0.001 t = 10.75 n = 15 Very highly significant
Calcium %	21.00	22.09	+ 1.09	± 0.255	P < 0.001 t = 4.24 n = 15 Very highly significant
Magnesium %	0.216	0.207	- 0.009	± 0.0029	P < 0.01 t = 3.10 n = 15 Highly significant
Phosphorus %	8.53	9.14	+ 0.61	± 0.13	P < 0.001 t = 4.69 n = 15 Very highly significant

Figure 1 - Alongitudinal median section of the foot.

- a. Distal sesamoid bone.
- b. Common extensor tendon.
- c. Deep flexor tendon.
- d. Ergot.
- e. and f. Cavities of the proximal and distal interphalangeal joints.
- g. Collateral ligament of the distal sesamoid bone.
- h. Distal sesamoidean cavity.
- i. Single phalango sesamoidean ligament.
- j. Digital cushion.
- k. Corium of the sole.
- l. Wall of the hoof.
- m. Laminar corium.



Figure 2 - Radiograph of the blood supply to the foot.



Figure 3A - Lateral view of the parietal aspect of OFL PIII of 5 months foal. (X 1.5)

- a. Extensor process.
- b. Parietal surface.
- c. Parietal groove.
- d. Proximal palmar process.
- e. Distal palmar process.
- f. Depression for distal attachment of the collateral ligament of the distal interphalangeal joint.

Figure 3B - Palmar view of PIII of 1 year old foal. (X 1.5)

- a. Side bone extending from the proximal palmar process.
- b. Solar surface of the distal palmar process.
- c. Semilunar crest.
- d. Flexor surface.
- e. Solar foramen.

Figure 4 - Photomicrograph of transverse section in the NFM cartilage and part of PIII of 9 months Exmoor fetus showing the direct continuation of the cartilage of the hoof (a), with the cartilage of the proximal palmar process (b). Note the cartilage canals (c). (X 4)

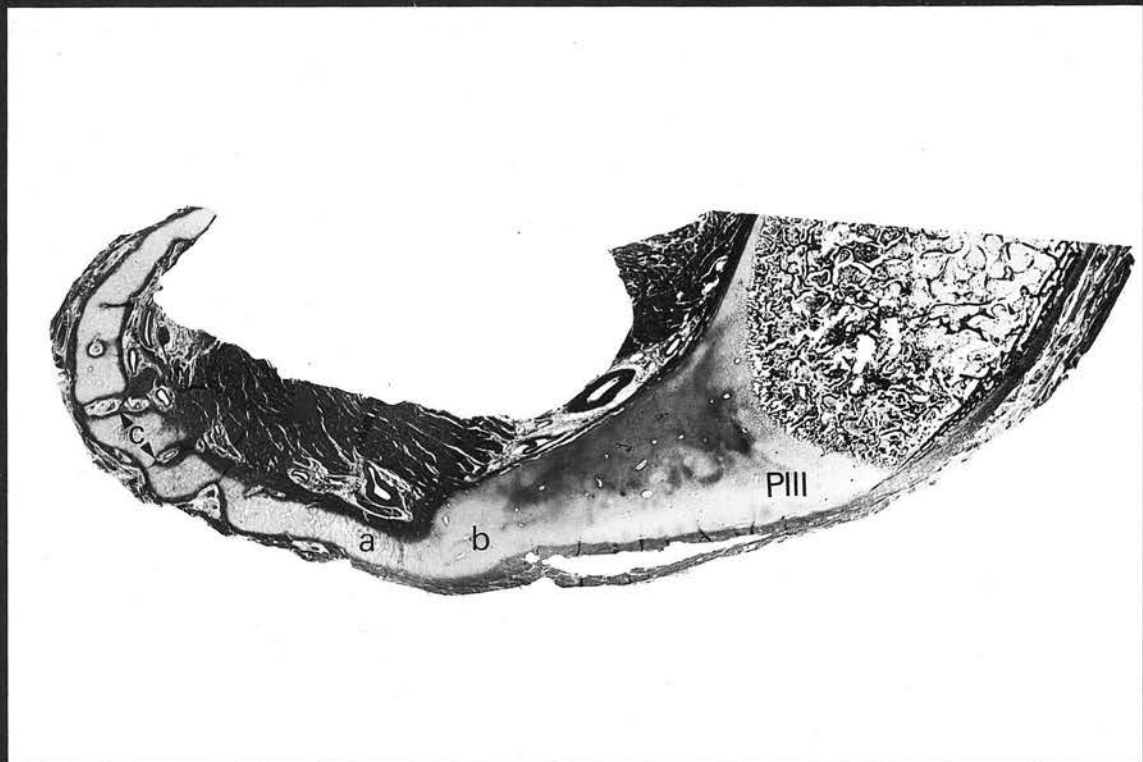
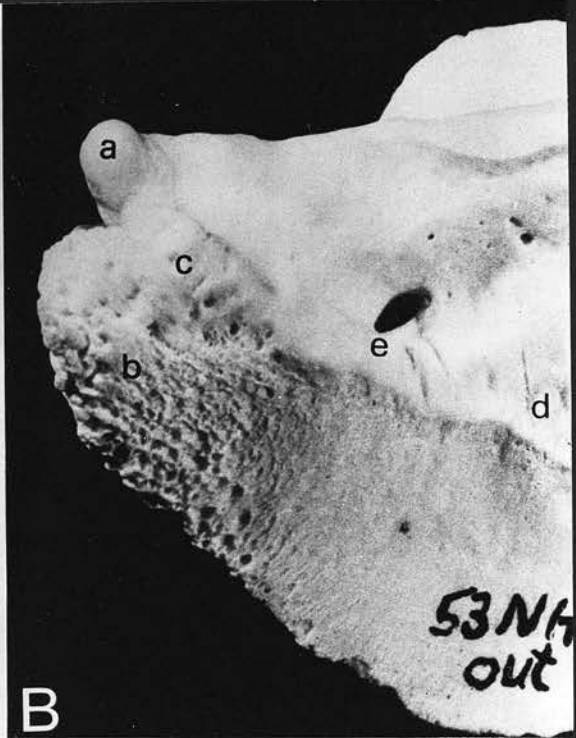
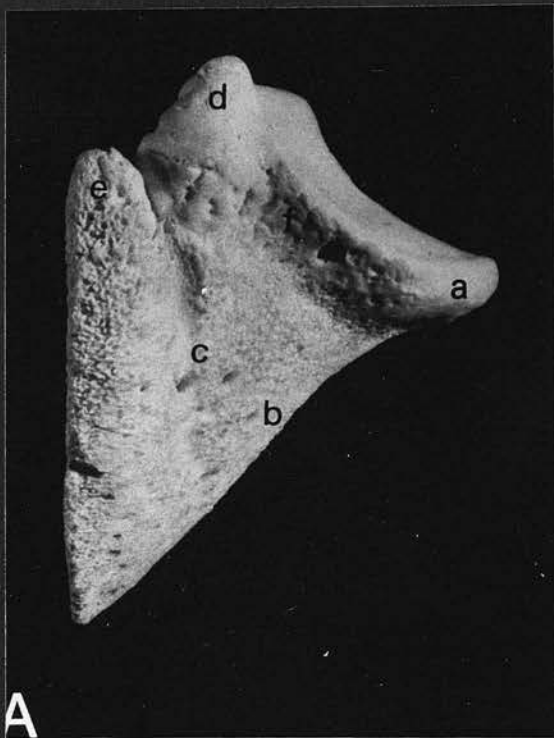


Figure 5A - Parietal aspect of OF PIII of 5 months fetus. (X 2)

a. Dorsal border.

b. Coronary border.

c. Solar border.

a - b. Dorsal surface.

b - c. Parietal surface.

Figure 5B - Lateral view of the parietal aspect of NFM PIII of 10 months fetus. The parietal groove is not developed at this age. (X 2)

Figure 5C - Lateral view of the parietal aspect of NFL PIII of 2 days old foal. Notice the early appearance of the parietal groove (d). (X 2)

Figure 5D - Lateral view of the parietal aspect of NFM PIII of 2 months foal. Notice the well developed parietal groove (d). (X 2)

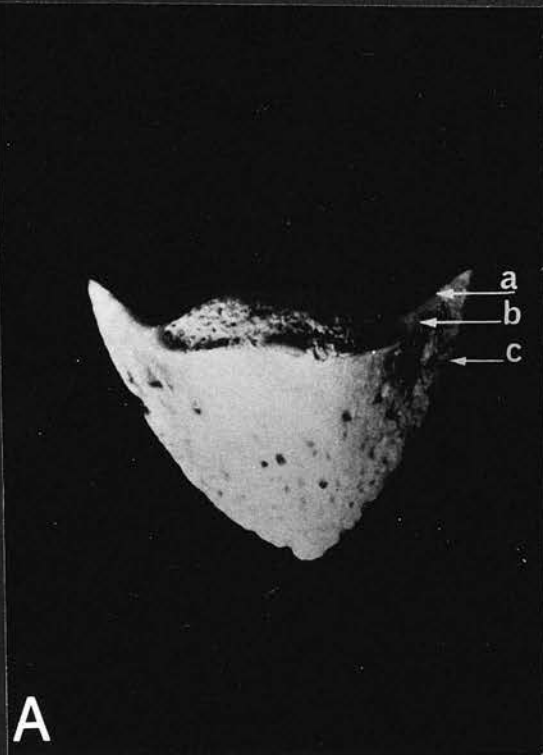


Figure 6A - Lateral view of the parietal aspect of OFL PIII of 6 months foal. Notice the traces of side bone appearance compared with Figure 3A. (X 2)

- a. Parietal surface.
- b. Parietal groove.
- c. Side bone.
- d. Distal palmar process.

Figure 6B - Palmar view of OF PIII of 5 months fetus. Notice the sharp projection of the distal palmar process (d) with its dorsal border leading to the solar foramen (e). (X 2)

Figure 6C - Palmar view of PIII of 10 months fetus; its distal palmar process (d) still showing same features shown by Figure 6B. (X 2)

Figure 6D - Palmar view of PIII of 6 months foal. Notice that at this stage the space between the proximal and the distal palmar processes (c - d) is filled by the development of the semilunar crest (f). (X 2)

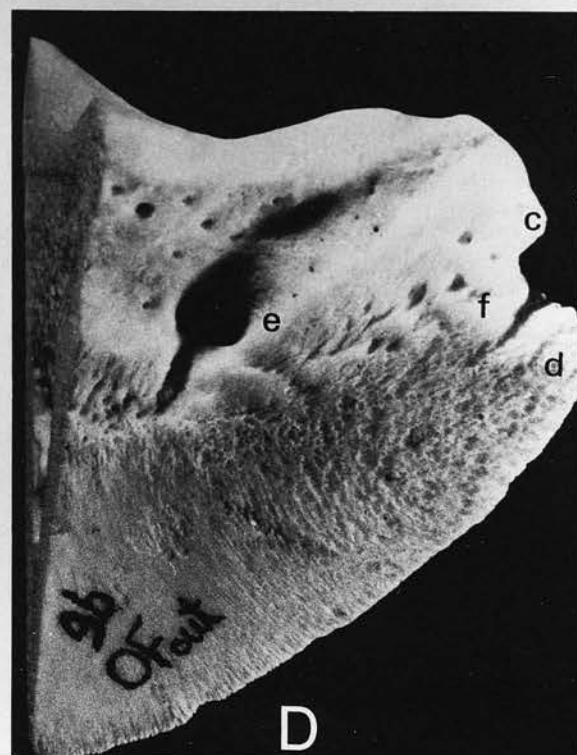
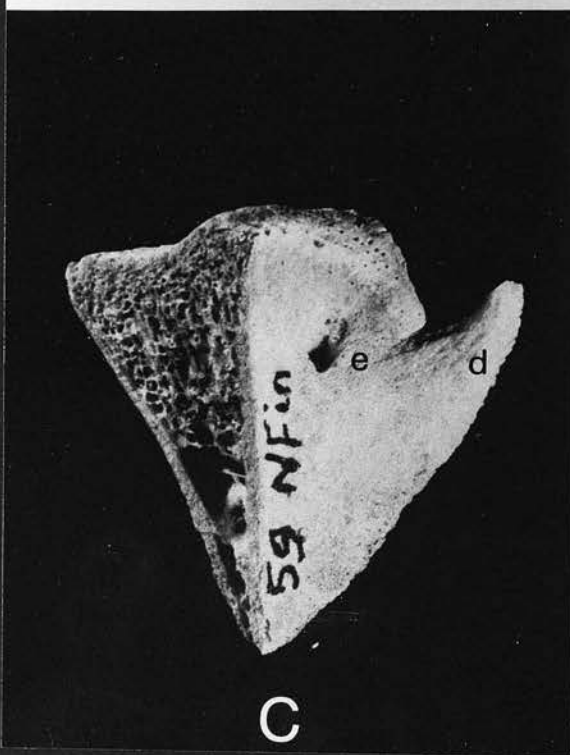
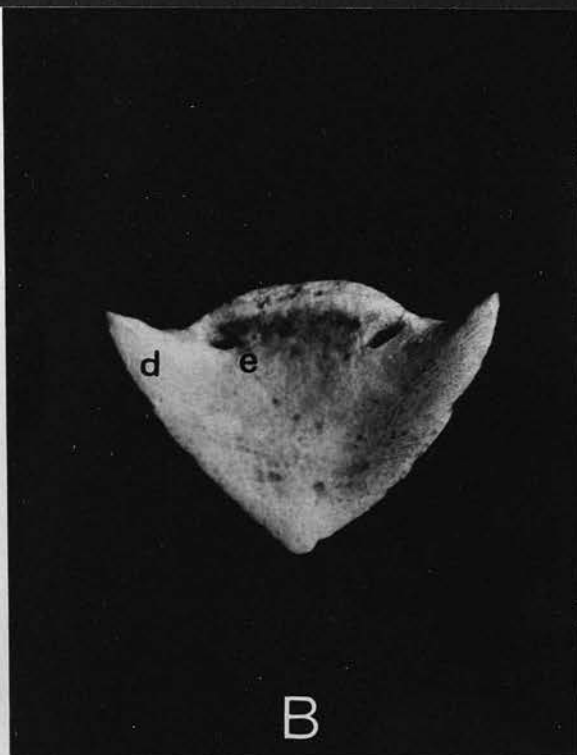
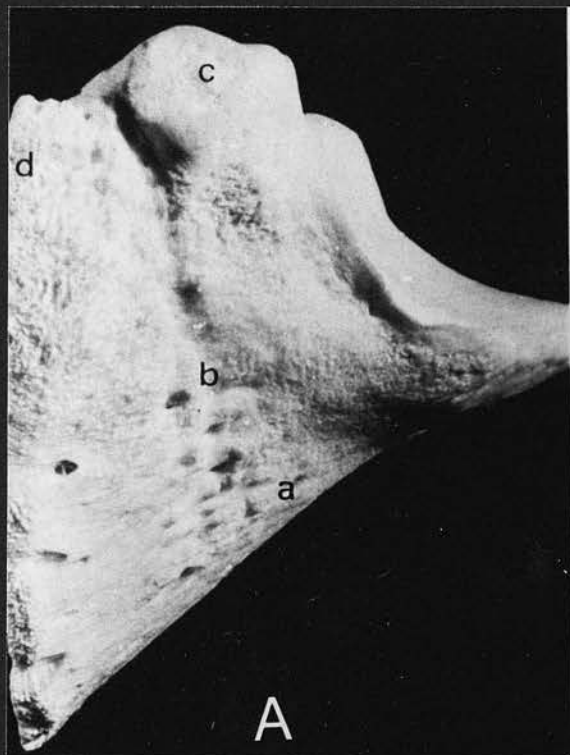


Figure 7A - Palmar view of PIII of 8 months foal. (X 2)

- a. Side bone.
- b. Solar surface of the distal palmar process.
- c. Semilunar crest.
- d. Solar foramen.

Figure 7B - Palmar view of NFL PIII of 2 days foal. The dorsal border of the distal palmar process apart from the solar foramen (d) with early development of the semilunar crest (c). The distal palmar process is still sharp. (X 2).

Figure 7C - Palmar view of PIII of 2 months foal. The semilunar crest (c) not yet completely formed. Notice the reduction in the sharpness of the distal palmar process (b). (X 2)

Figure 7D - Palmar view of PIII of 5 months foal. Notice that the semilunar crest (c) is not completely ossified; and the space between the proximal and the distal palmar processes is still not yet filled. (X 2).

d. Solar Foramen.

Figure 7B - Palmar view of NFL PIII of 2 days foal. The dorsal border of the distal palmar process apart from the solar foramen (d) with early development of the semilunar crest (c). The distal palmar process



A



B



C



D

Figure 8 - Lateral view of the parietal aspect of OHM PIII of 2 years Thoroughbred horse shows a well defined plantar foramen (a) and the bone formation (b) covering part of the parietal groove (c). (X 2)

Figure 9 - Palmar view of OHL PIII of the same animal (Fig. 8), shows a well defined plantar foramen (a) which is formed by the junction of the two bony spurs, one spur as formed in side bone (b) and the other from the adjacent part of the semilunar crest (c). (X 2)

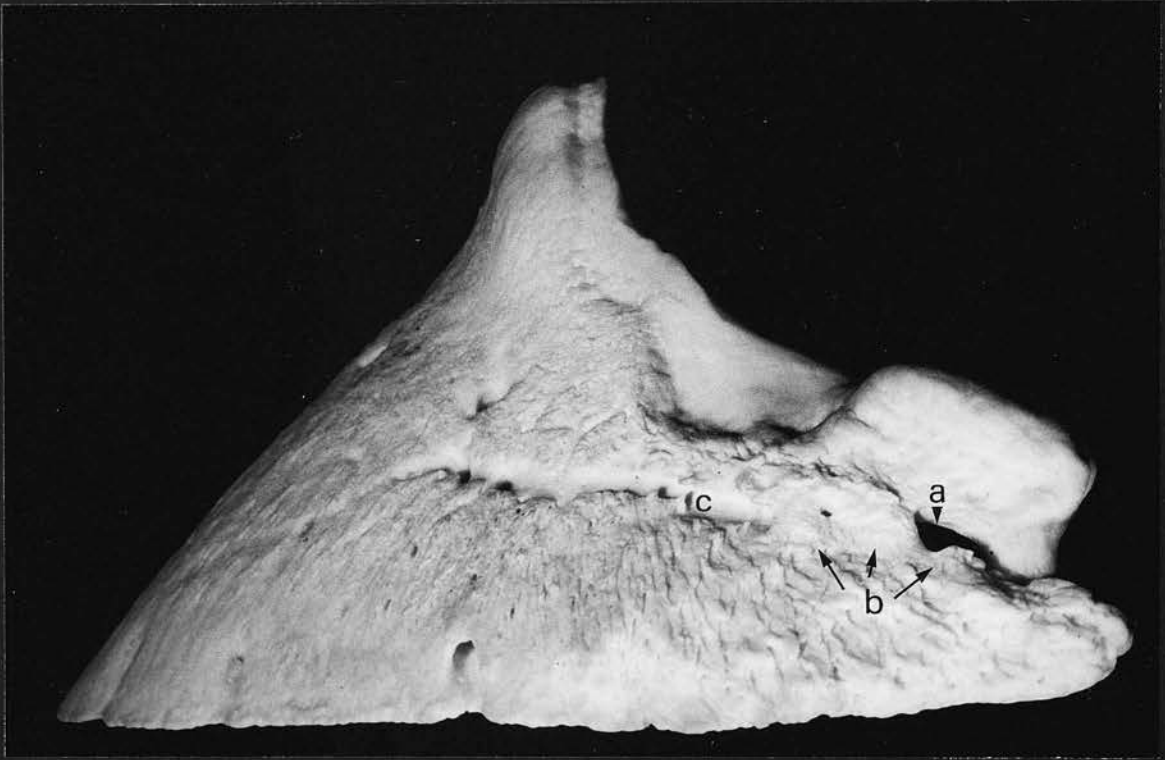


Figure 10 - Lateral view of the parietal aspect of NHM PIII of 20 years  
fell pony. The foramen is not formed. (X 1.5)

Figure 11 - Lateral view of the parietal aspect of OFM PIII of 1 year  
Thoroughbred X hunter foal shows the foramen forming by the junction of  
the two bony spurs. (X 1.5)

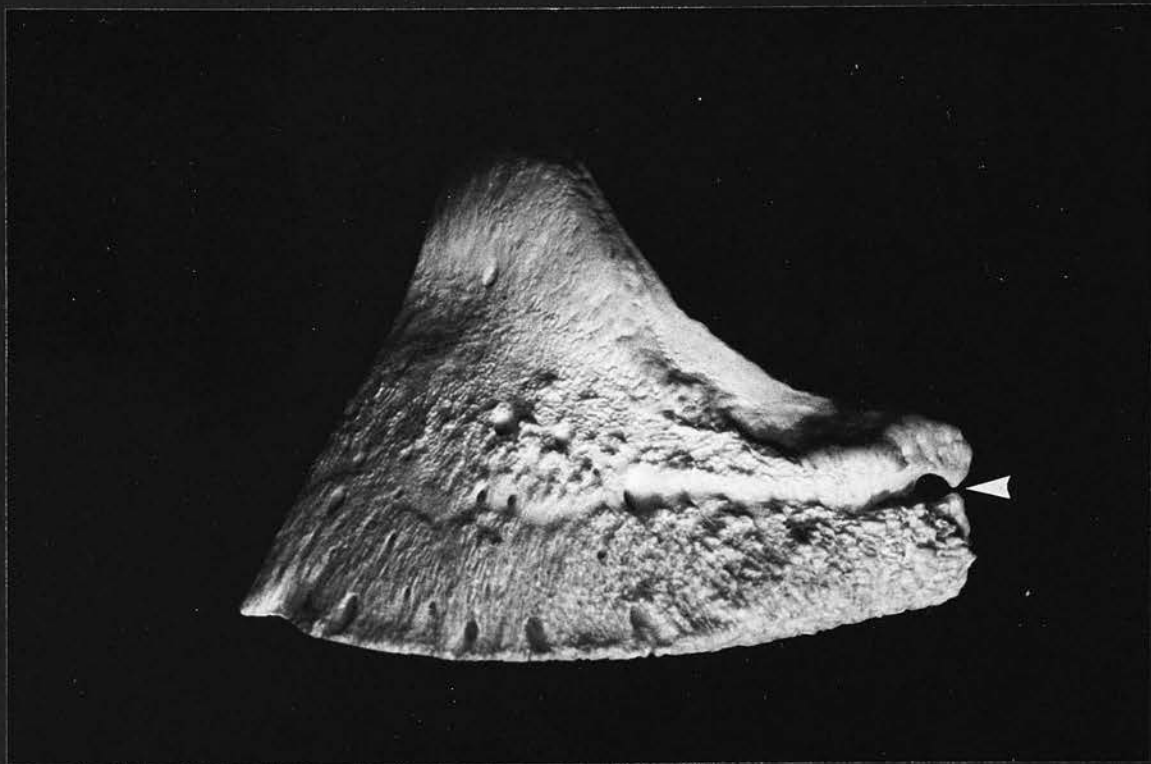


Figure 12 - Lateral view of the foot after removing its coria and ligaments to show the cartilage of the hoof.

- a. Cranio - proximal angle.
- b. (Cranio - distal) angle, *Cranio - solar angle.*
- c. (Caudo - distal) angle, *Caudo - solar angle.*
- d. Caudo - proximal angle.

(Figures 12, 13, 16, 17 and 18 - Specimens from the Anatomy Museum, Royal (Dick) School of Veterinary Studies.)

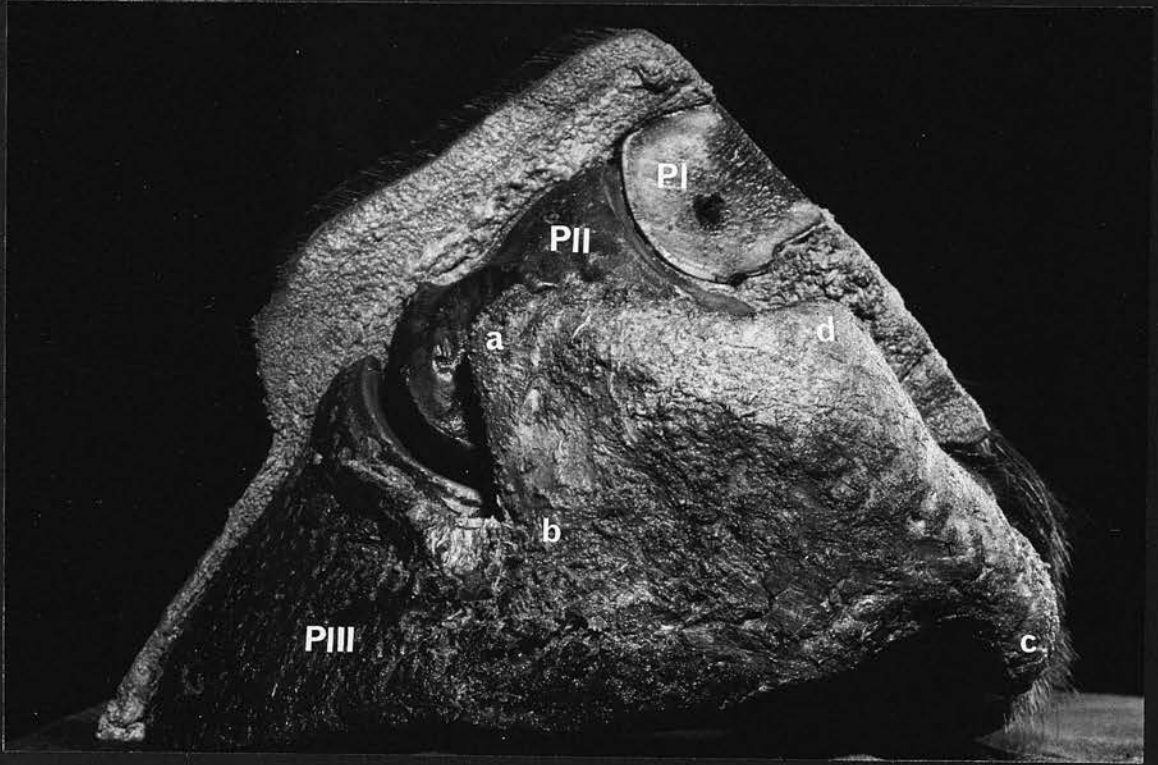


Figure 13 - A foot injected with rubber latex, showing the coronary and the dorsal venous plexuses.



Figure 14 - Half boiled specimen shows the axial surface of the cartilage of the hoof (a). Notice the short bands of fibrous tissue (arrow) connecting the cartilage to the distal palmar process (b). (X 2)

Figure 15 - Abaxial surface of the half boiled specimen shown in Fig. 14.

a. Ligamentous fibres leaving the abaxial surface of the cartilage (b) to be attached to the common extensor tendon (c) and to join the homologous fibres from the other side, and (d) the collateral ligament of the distal interphalangeal joint. (X 2)

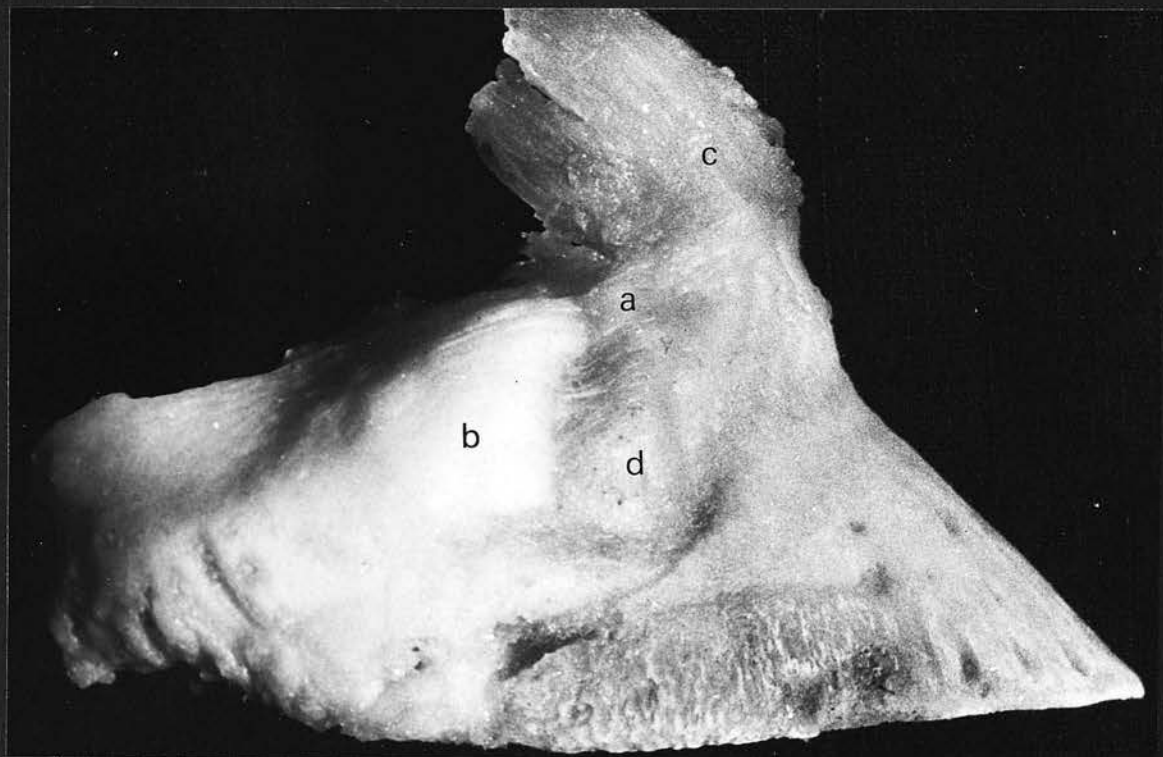
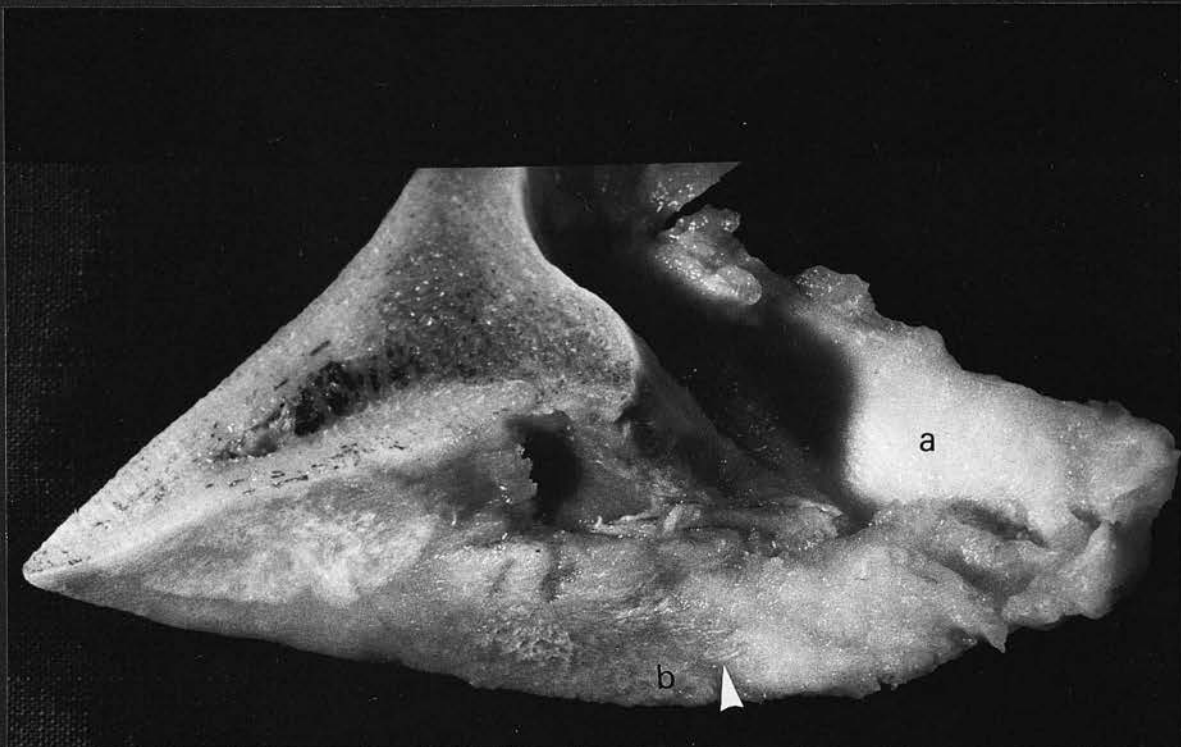


Figure 16 - Palmar view of the foot after removing the flexor tendon and the digital cushion.

- a. Cartilage of the hoof.
- b. Distal sesamoid bone.
- c. Single phalangosesamoidean ligament.
- d. Collateral ligament of the distal sesamoid bone.

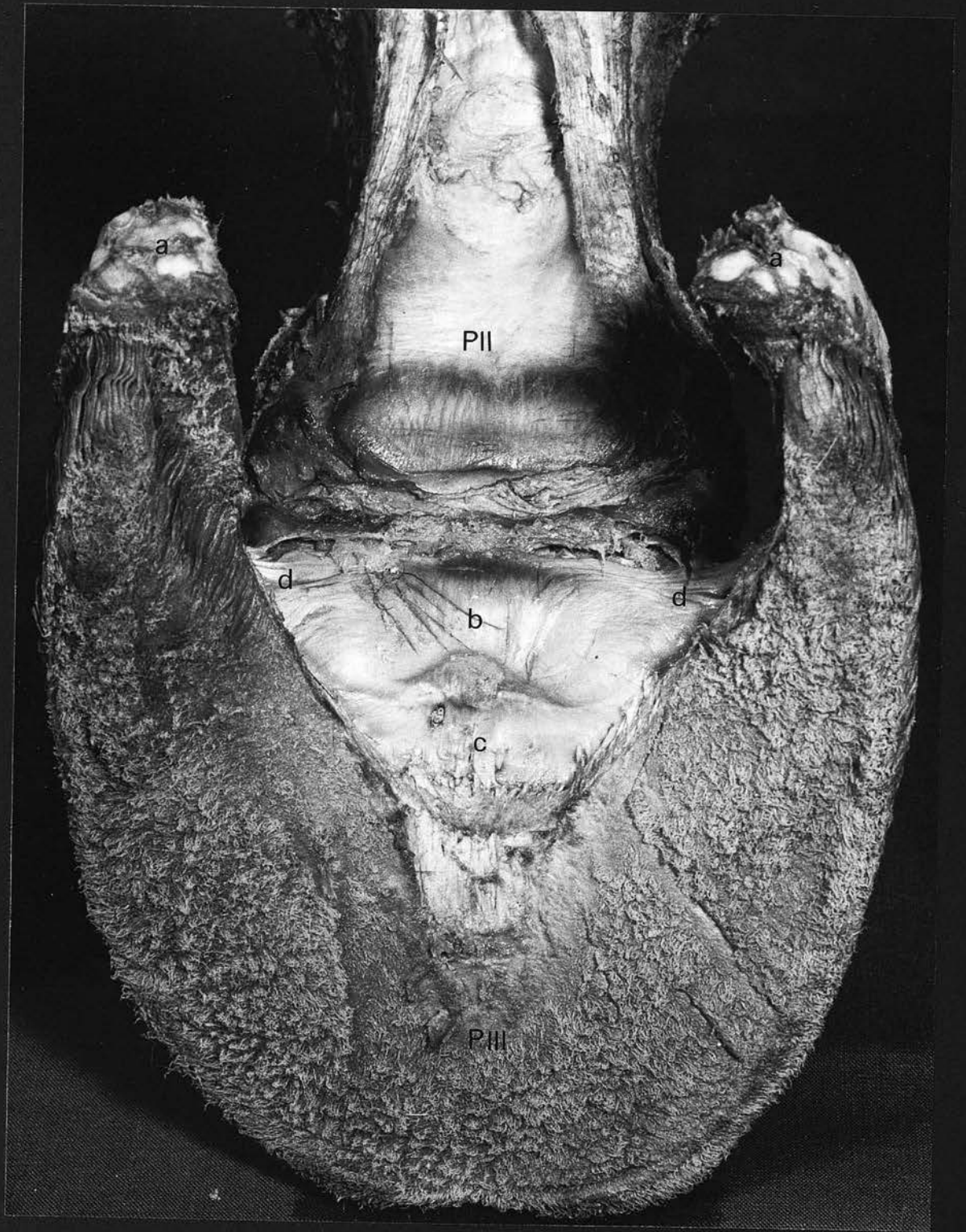


Figure 17 - Lateral view of the foot after removing the hoof.

- a. Common extensor tendon.
- b. Deep flexor tendon.
- c. The ill defined ligament from PI to the cartilage of the hoof (d).

Anterior to this ligament is the notch (e).

Figure 18 - Antero-lateral view of a dissected foot with part of the cartilage of the hoof removed.

- a. Collateral ligament of the distal sesamoid bone, b. and c. branches to the axial surface of the cartilage.

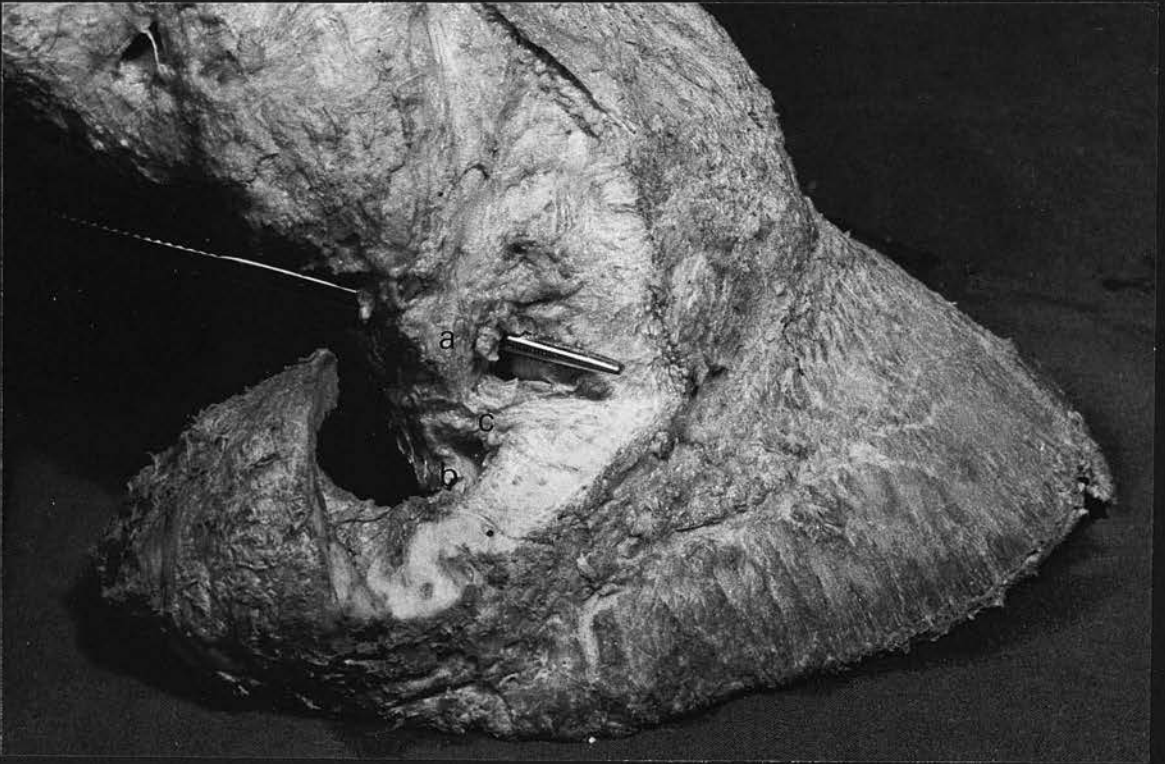
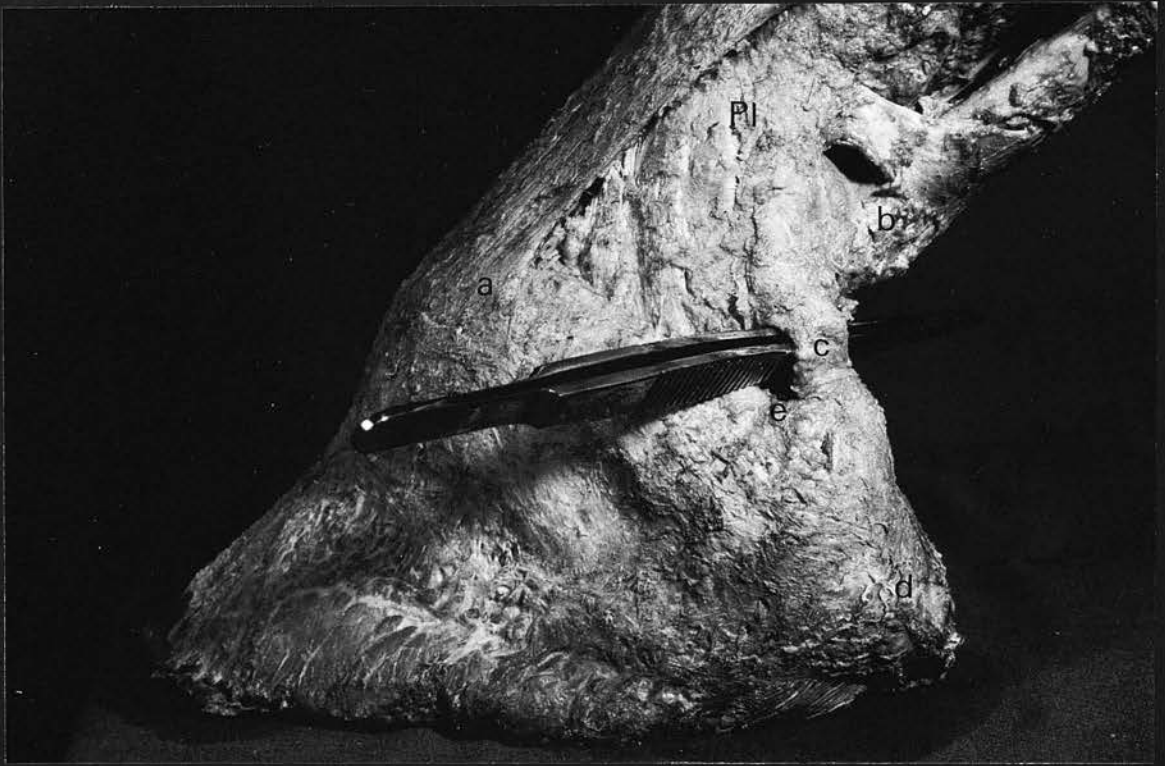


Figure 19 - Photomicrograph of a vertical section of the OFM cartilage of the hoof (a) and part of the distal palmar process of PIII of 17 years Shetland pony. Notice the fibrous band (b) connecting the two structures and also an ossification center <sup>(at the point of the</sup> arrow). (X 4)

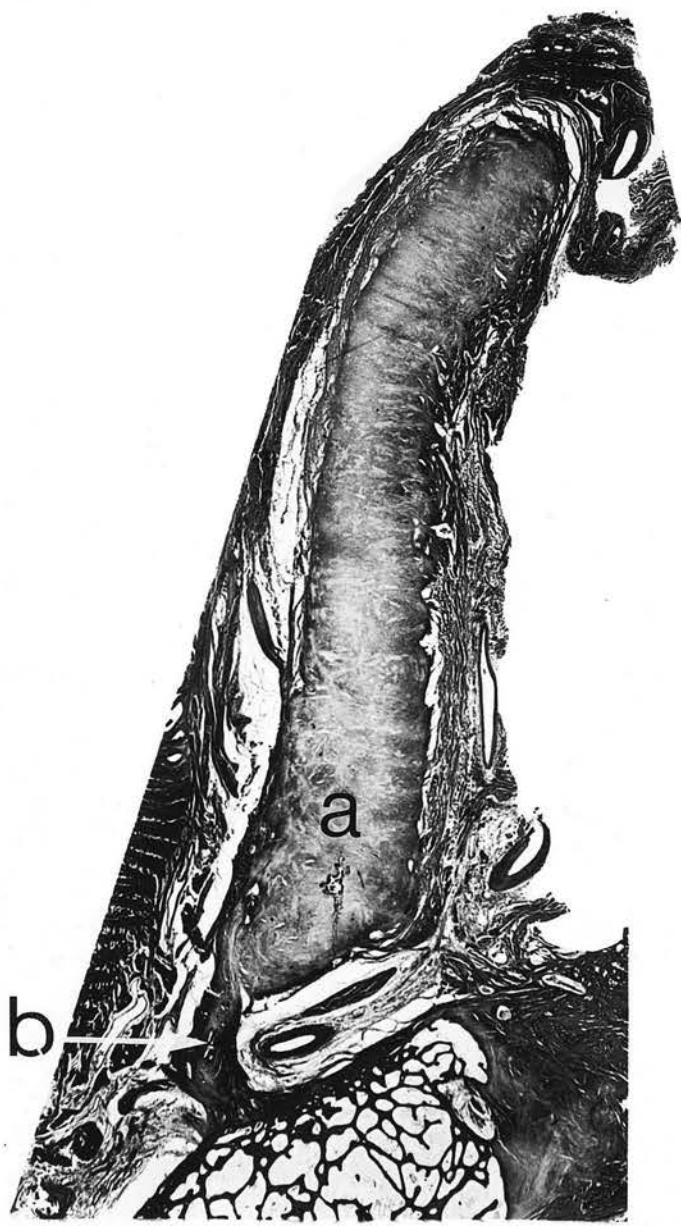


Figure 20 - Low power of the fibrous band (b) shown in Figure 19, showing the bone formation of this band from the distal palmar process of PIII (Haematoxylin and Eosin X 70)

Figure 21 - Photomicrograph of transverse section in the NFM cartilage and part of PIII of 6 weeks Thoroughbred foal. (X 4)

- a. Cartilage of the hoof.
- b. Cutaneous part of the cartilage at the bulb of the heel.
- c. Cartilage canals.

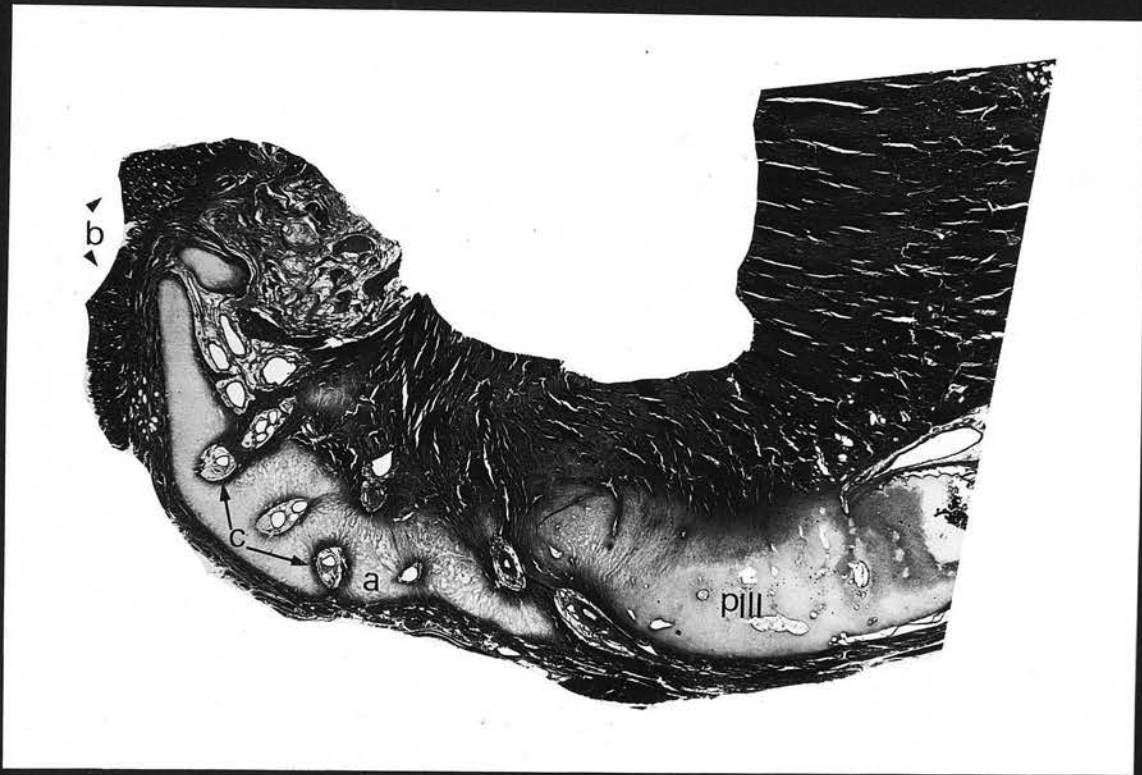
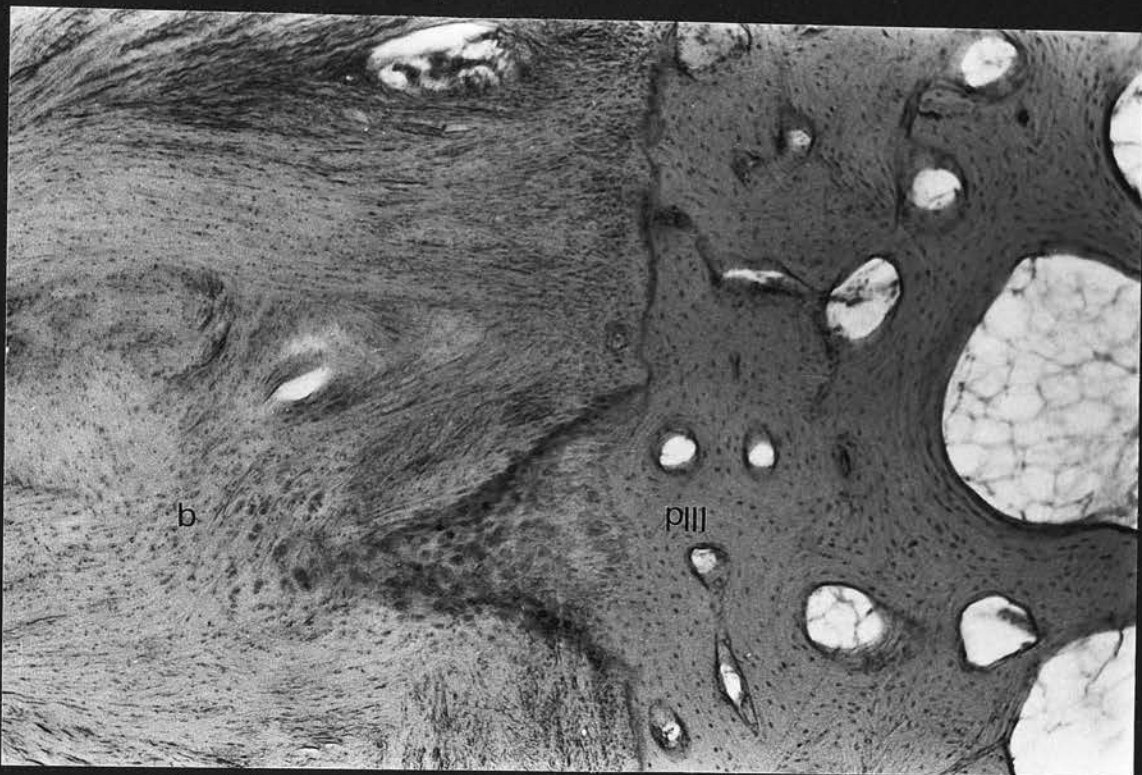


Figure 22 - Routine adopted for the anteroposterior radiography of the horse's foot.



Figure 23 - Radiographs of horse's feet showing the features of the proximal palmar process and its invasion into the cartilage of the hoof (arrow). (X 0.66).

- A. Off-fore foot of 5 months Thoroughbred foal.
- B. Off-fore foot of 6 months Thoroughbred foal.
- C. Off-hind foot of 7 months Exmoor foal.
- D. Off-hind foot of 8 months Thoroughbred foal.

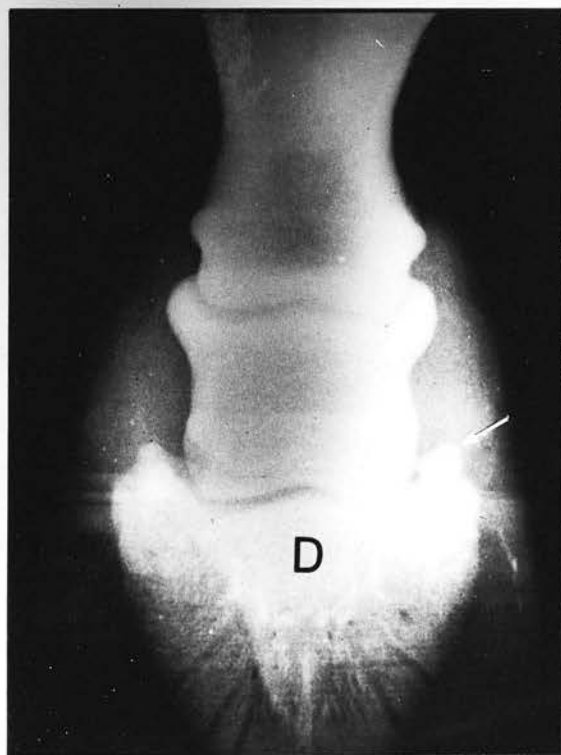
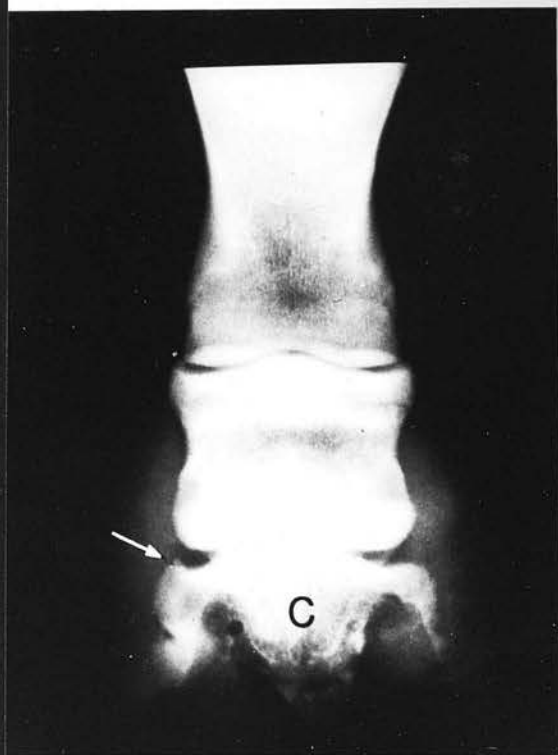
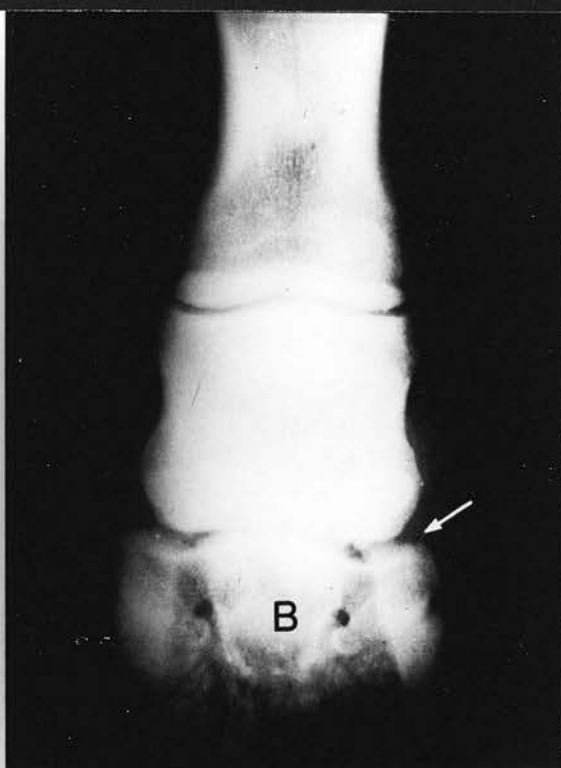
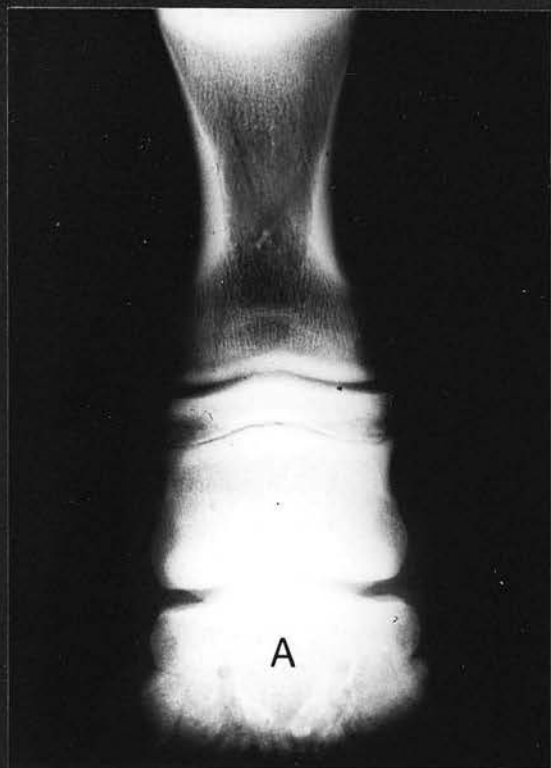


Figure 24 - Radiographs of horse's feet showing short side bone. (X 0.50).

A. Off-fore foot of 3 years trotter.

B. Near-fore foot of 4 years Clydesdale horse. Notice the bony islands (arrow).

C. Off-fore foot of 5 years Welsh x Highland pony.

D. Off-fore foot of 6 years lightweight riding pony.

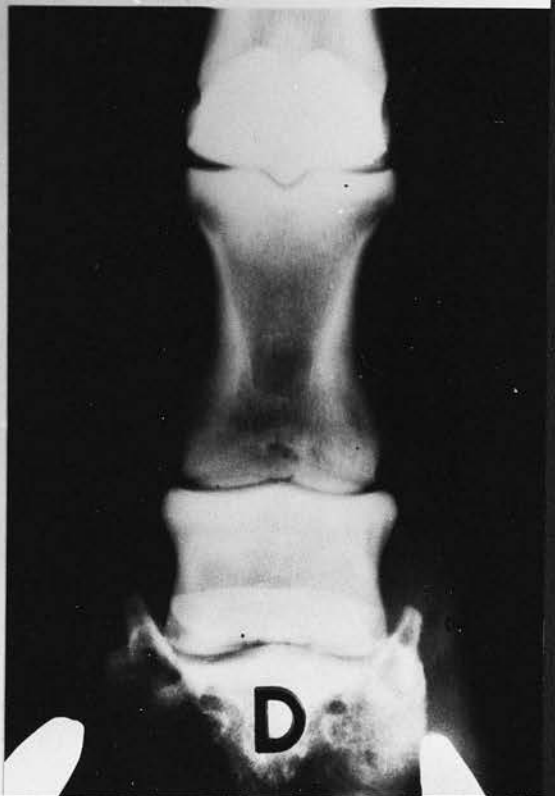
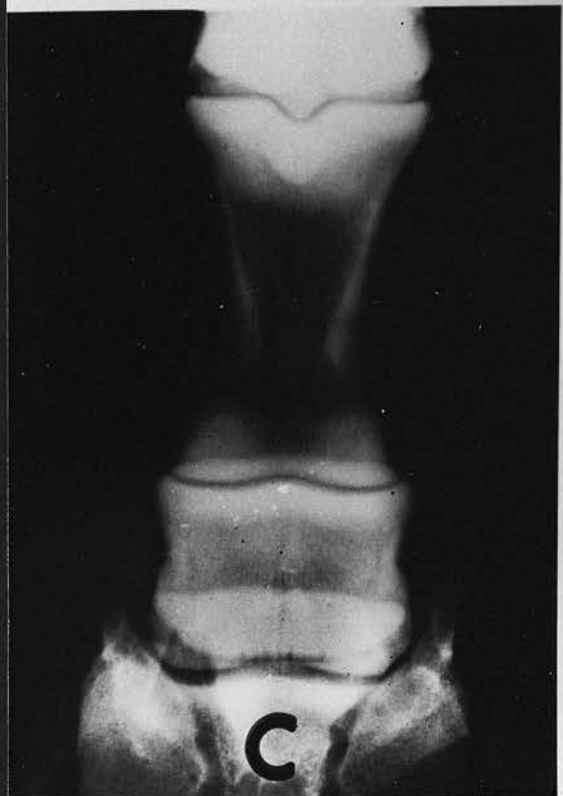
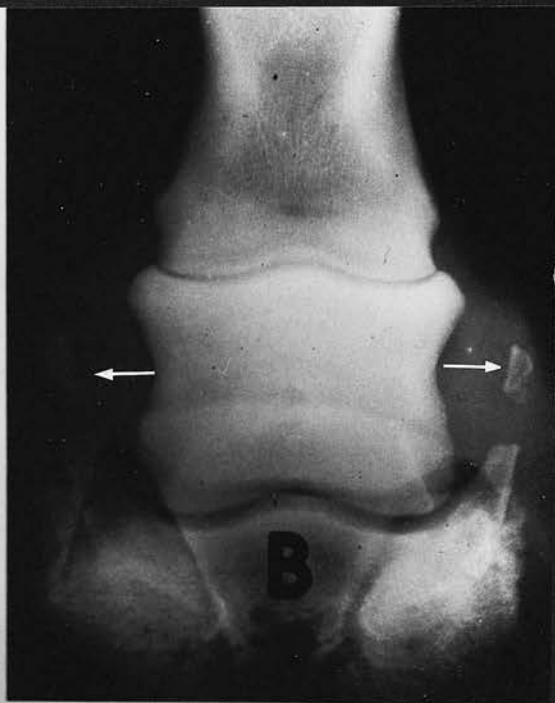


Figure 25 = Radiographs of horse's feet showing medium side bone. (X 0.50).

- E. Near-fore foot of 7 years Welsh pony.
- F. Off-fore foot of 8 years lightweight hunter.
- G. Off-fore foot of 15 years heavy draught horse.
- H. Off-fore foot of 17 years Thoroughbred horse.

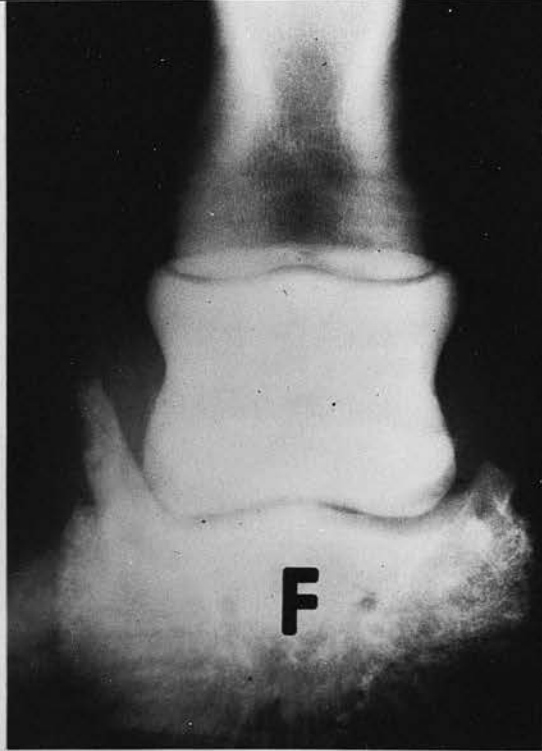


Figure 26 - Radiographs of horse's feet showing long side bone. ( $\times 0.50$ ).

- I. Near-fore foot of 7 years Highland pony.
- J. Near-fore foot of 10 years Welsh cob pony.
- K. Off-fore foot of 15 years Thoroughbred horse.
- L. Off-hind foot of 23 years Irish draught horse.

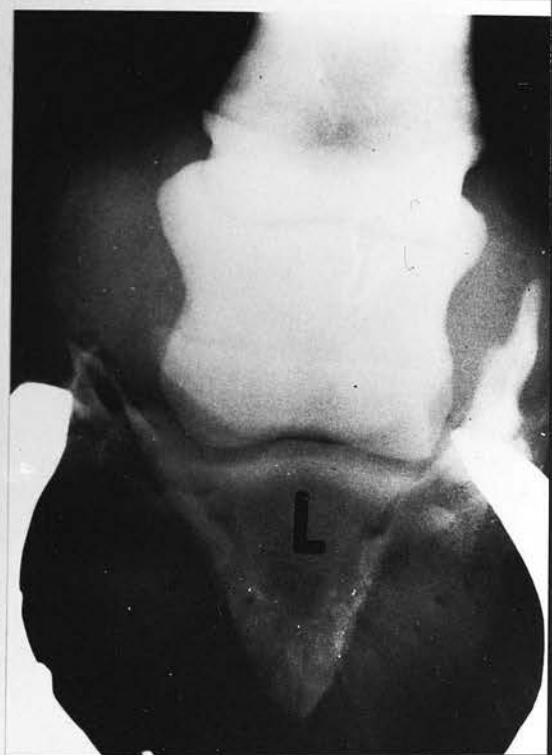
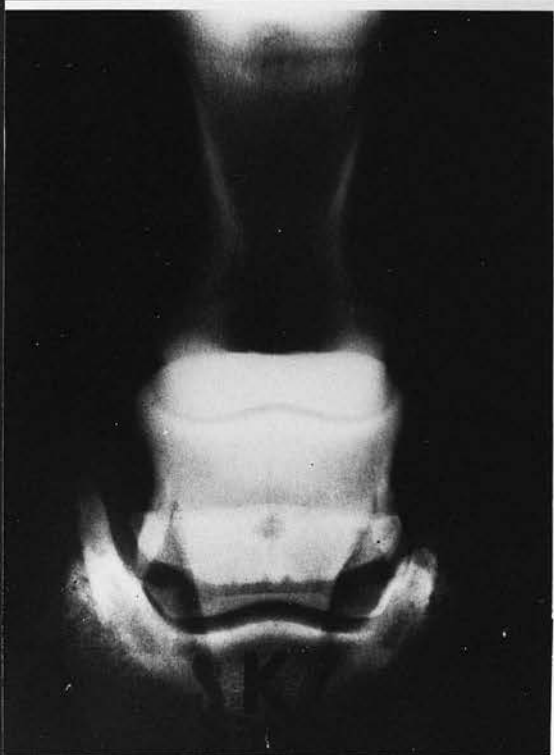


Figure 27 - Radiographs of horse's feet showing marked side bone. (X 0.50).

M. Near-fore foot of 7 years heavy weight hunter.

N. Off-fore foot of 7 years heavy weight hunter. OFM side bone give the appearance of a fracture.

O. Off-fore foot of 9 years heavy weight riding pony.

P. Near-fore foot of 12 years heavy weight hunter. Notice the bony island (arrow).



Figure 28 - Radiographs of horse's feet showing a bony island (arrow). (X 0.66).

- A. Near fore foot of 2 years Welsh cob pony.
- B. Off fore foot of 3 years Exmoor pony.
- C. Off fore foot of 3 years Thoroughbred horse.
- D. Near fore foot of 7 years Thoroughbred x riding pony. The bony island appears in direct contact with side bone.
- E. Near fore foot of 9 years heavyweight hunter.
- F. Off hind foot of 12 years heavyweight riding pony.

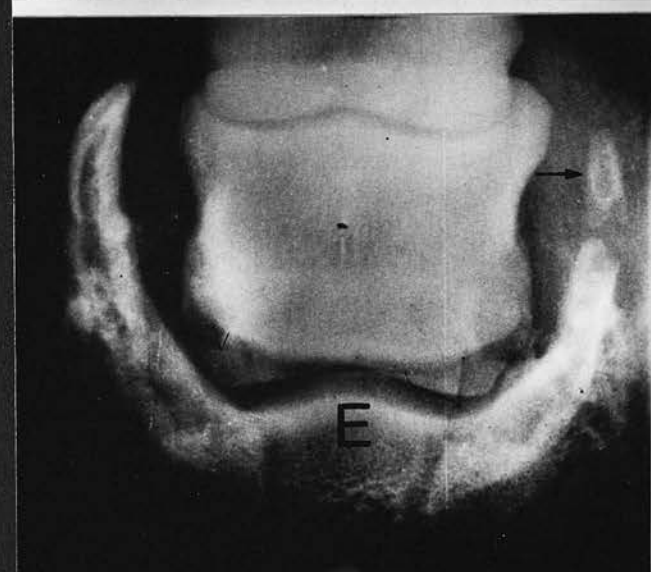
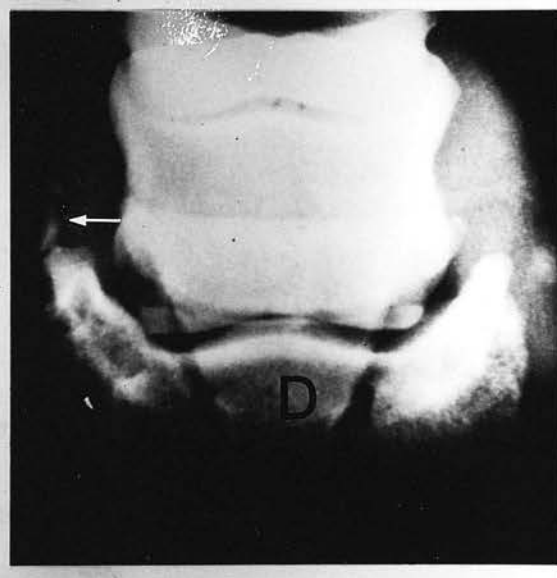
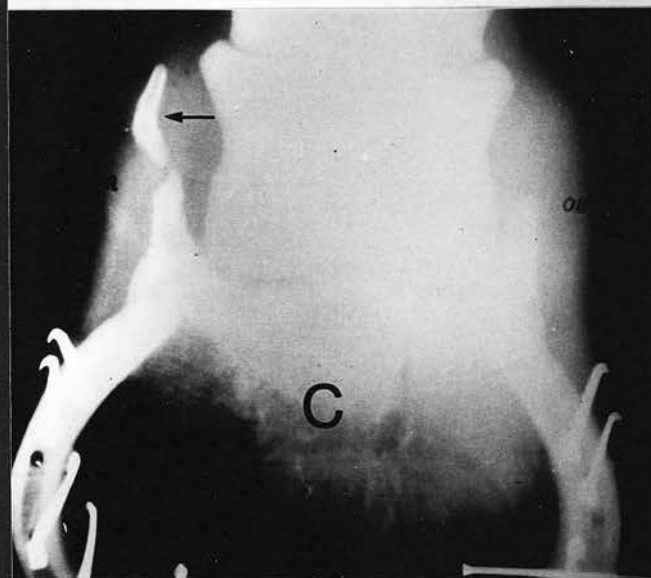
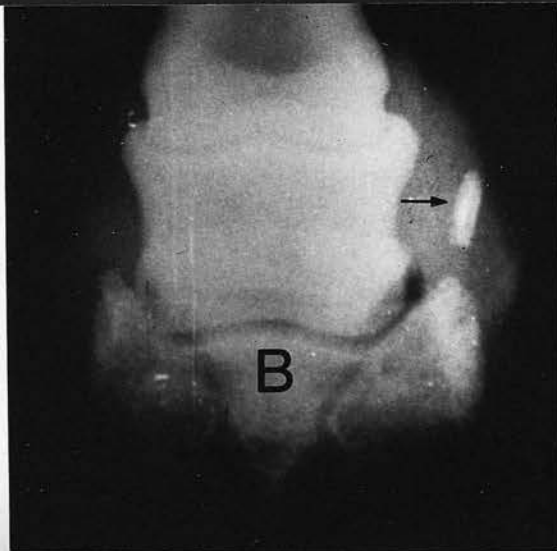
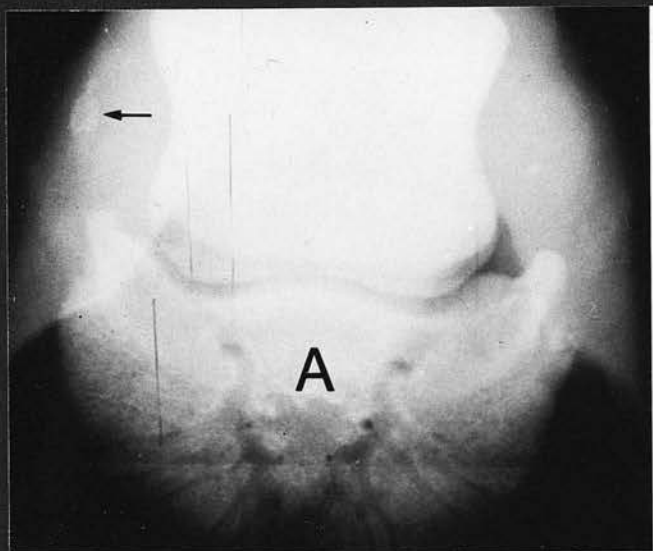


Figure 29 - Radiograph of OFM cartilage of 4 years heavy horse. Note<sup>e</sup> the shape, size and distance of the bony islands (a and b) from side bone and the distal palmar process.

Figure 30 - Radiograph of OFL cartilage of 10 years Exmoor pony, showing a bony island which on the anteroposterior radiological examination gives the appearance of a fracture (Fig. 31). ( X 1.25 ).

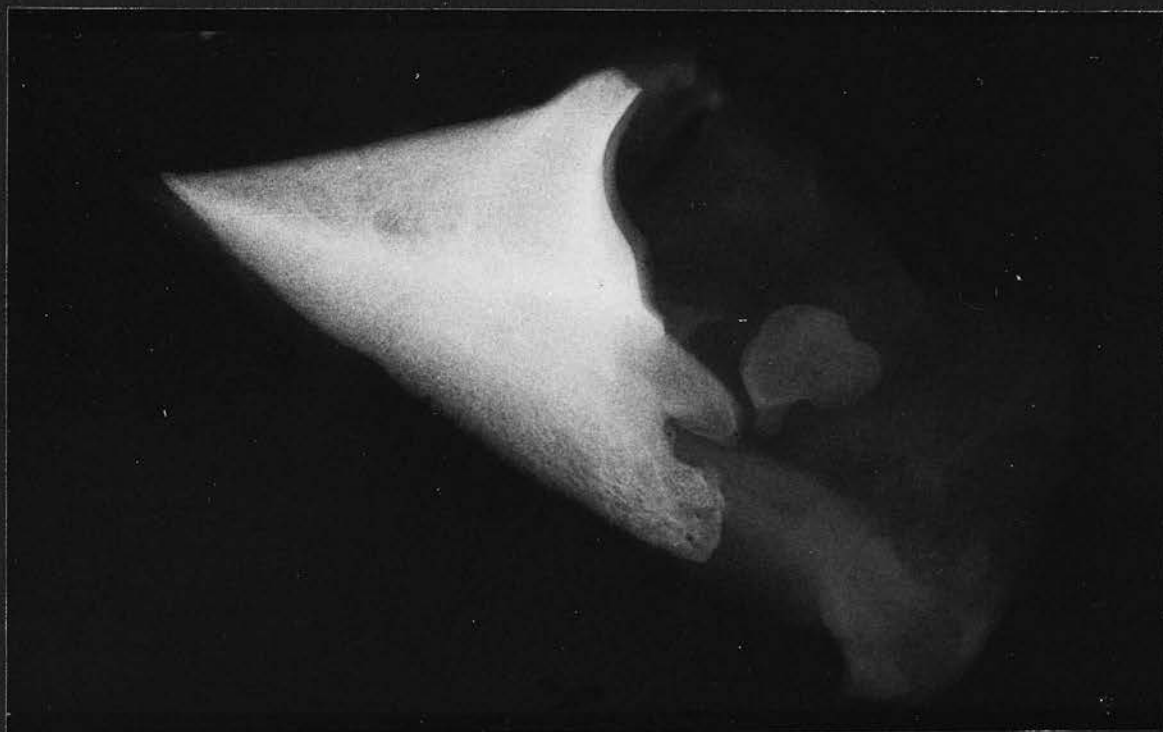


Figure 31 - Radiograph of OF foot of 10 years Exmoor pony showing a bony island (between two arrows).



Figure 32 - Radiograph of OHM cartilage of 17 years heavy horse showing bony islands at the cranio-proximal angle and the cranial border of the cartilage (arrows). Note the shape, size and distance of the bony island from the distal ~~palmar~~<sup>plantar</sup> process (arrow).

Figure 33 - Radiograph of OFL of 20 years heavy horse showing a well defined bony island and a number of spotty islands around side bone (arrows). Note the size, shape and distance of the bony island from the distal palmar process (arrow).

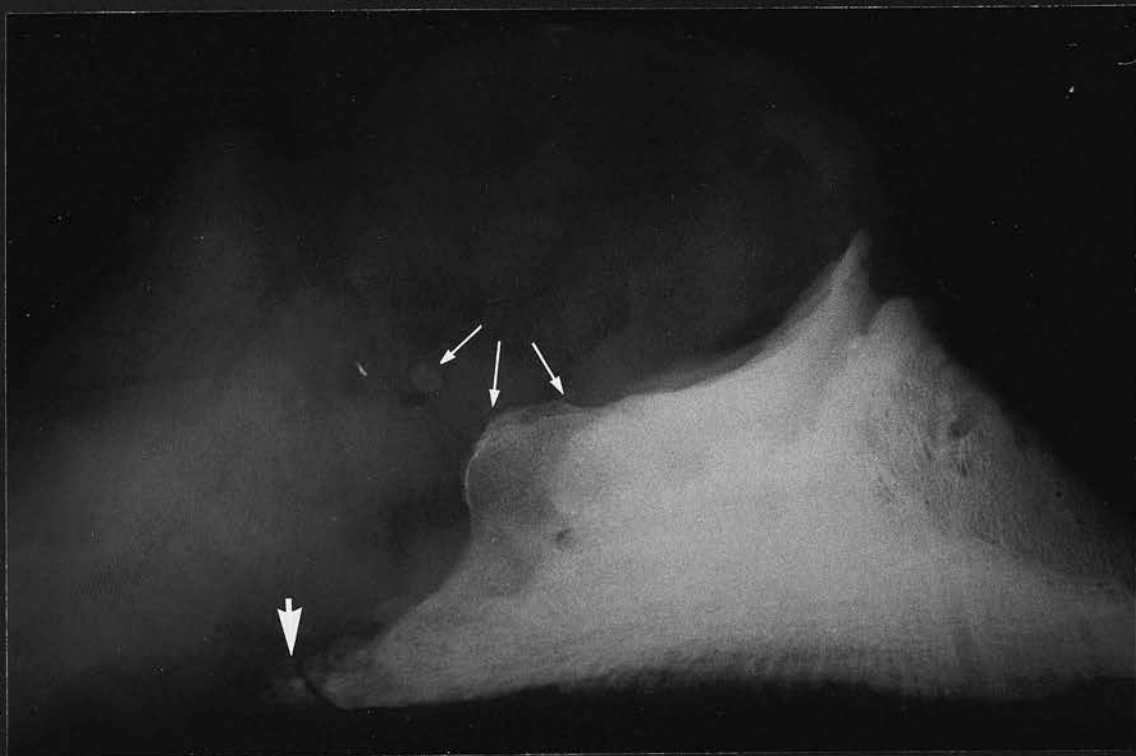
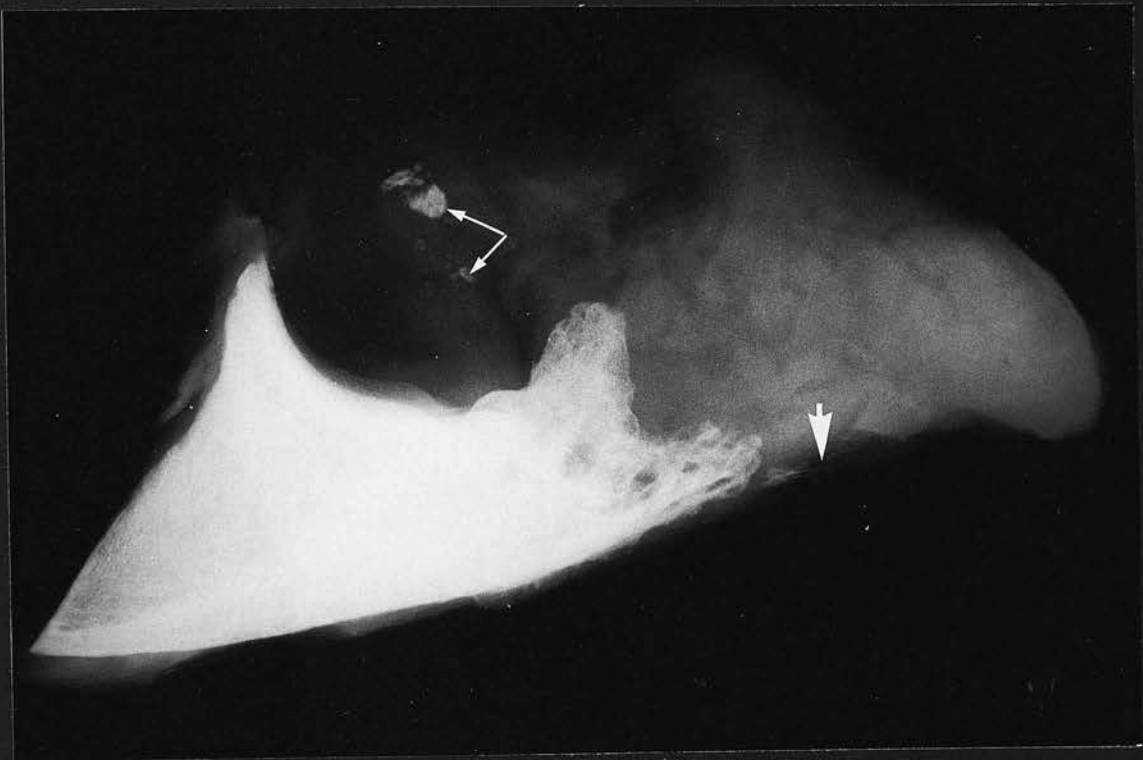


Figure 34 - Radiograph of NFL cartilage of 20 years fell pony showing a bony island with spotty islands between the latter and side bone. Note the size, shape and distance of the bony island from the distal palmar process (arrow).

Figure 35 - Radiograph of NFM cartilage of 20 years hunter showing bony islands at the caudo-proximal angle of the cartilage (arrow).

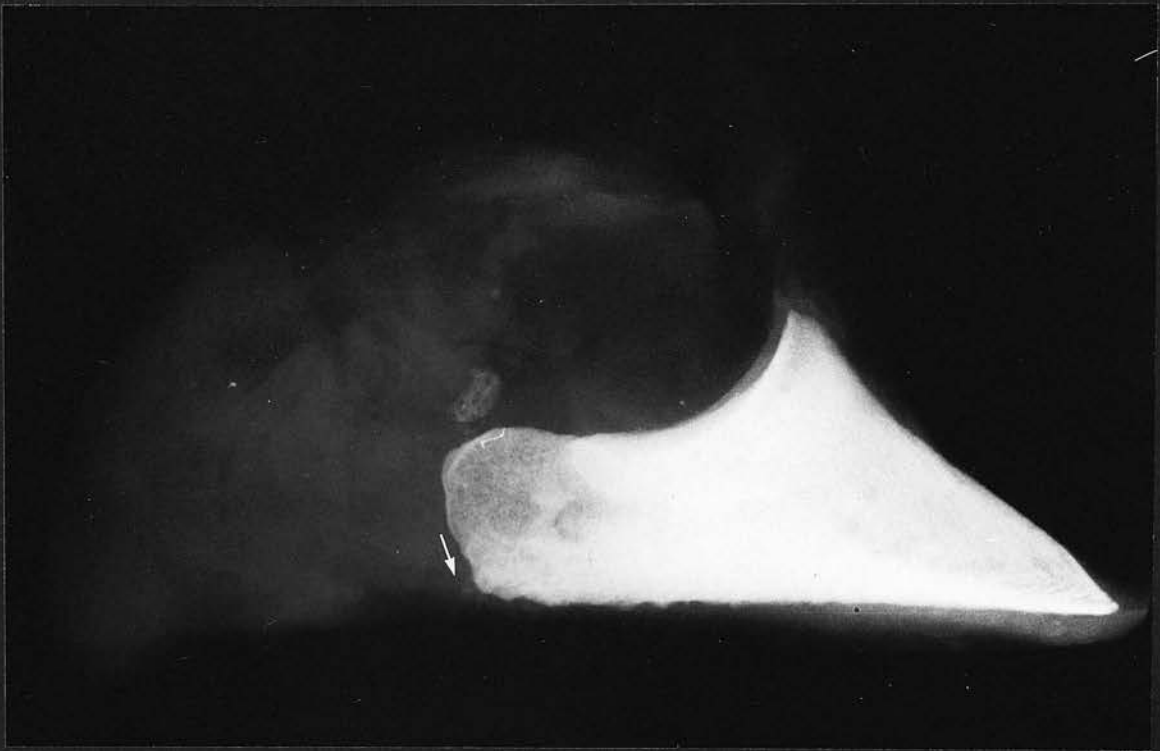


Figure 36 - Radiograph of a rotated NH foot of 4 years hunter showing the bony island (arrow) at the level of the medial distal plantar process of PIII.

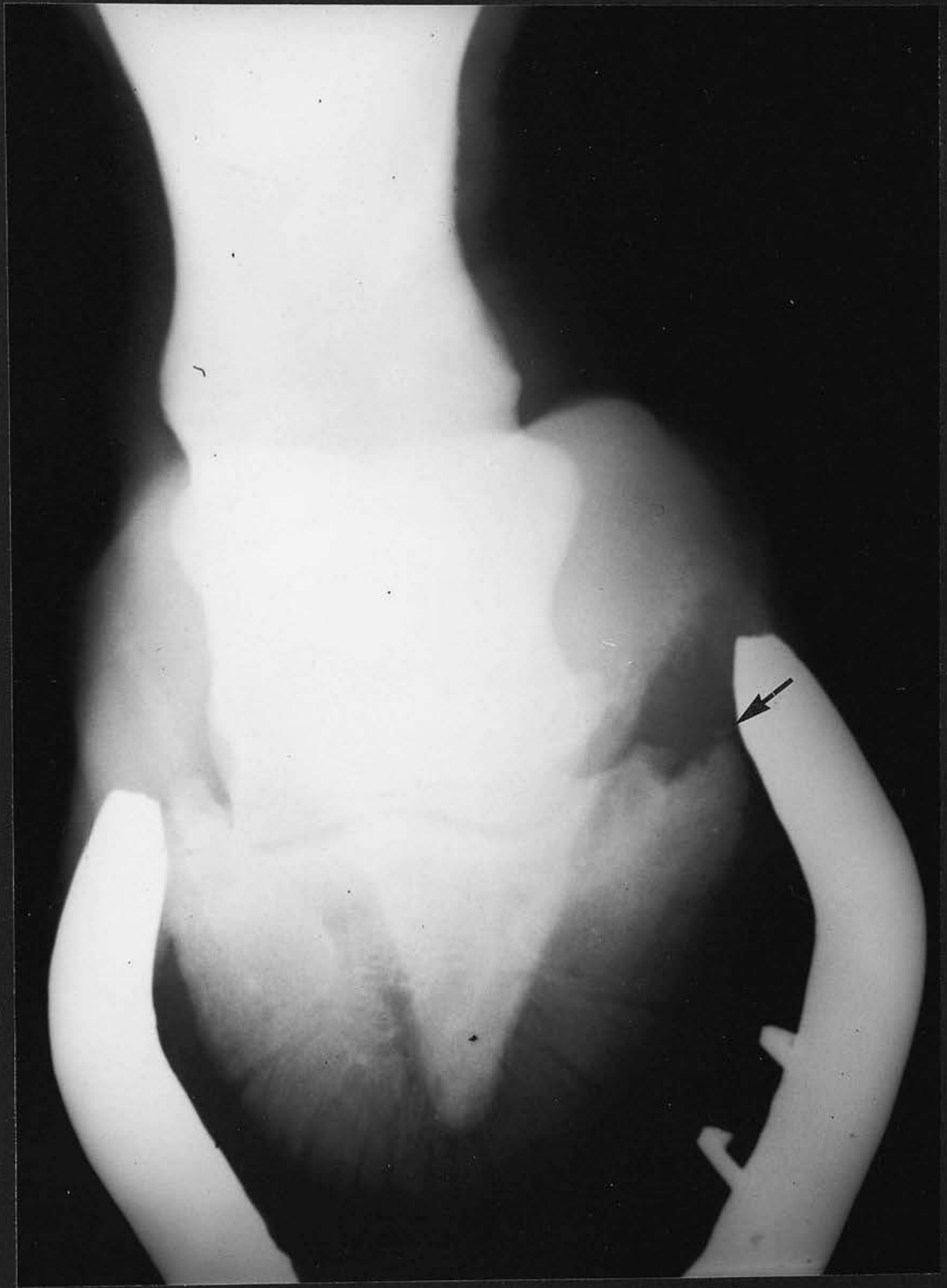


Figure 37 - Radiograph of NF foot of 15 years Thoroughbred horse showing the distal palmar processes and a bony island (arrow) at the level of the medial process. Using a film divided by a lead cover, both distal palmar processes were shown by two exposures.

Figure 38 - Radiograph of OHL cartilage of 1 year Thoroughbred x hunter foal showing a bony island (arrow) united to the distal plantar process.

(X 1.25).

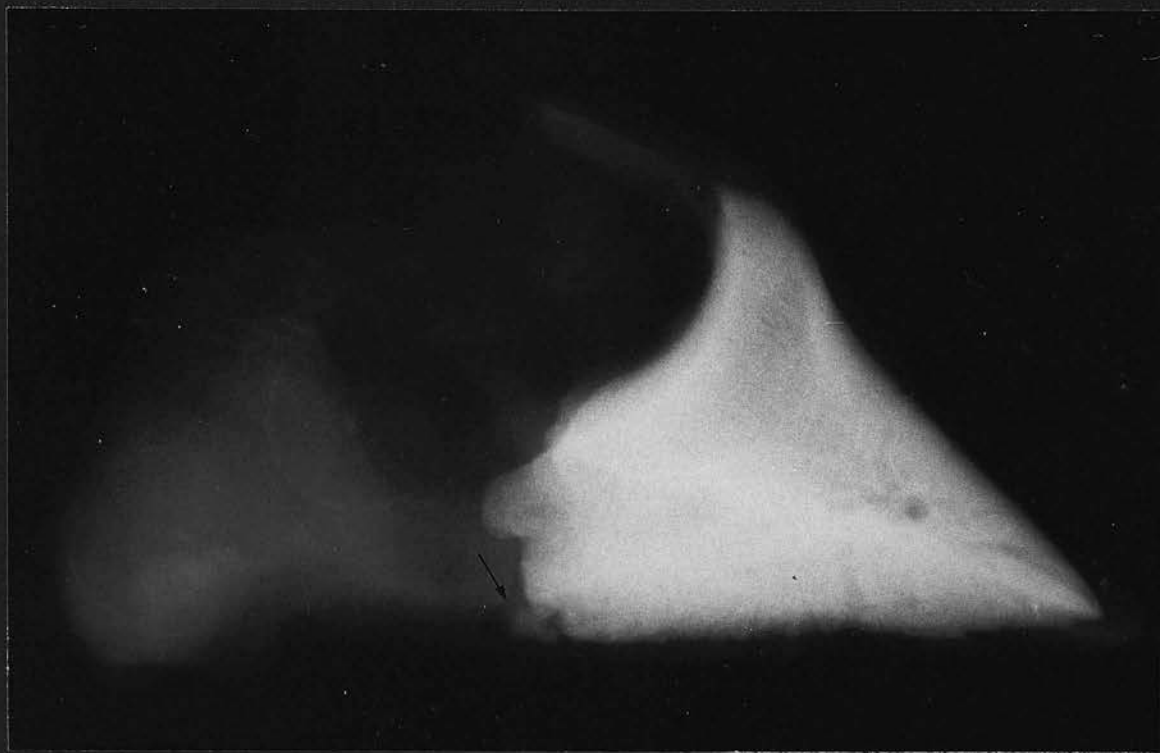
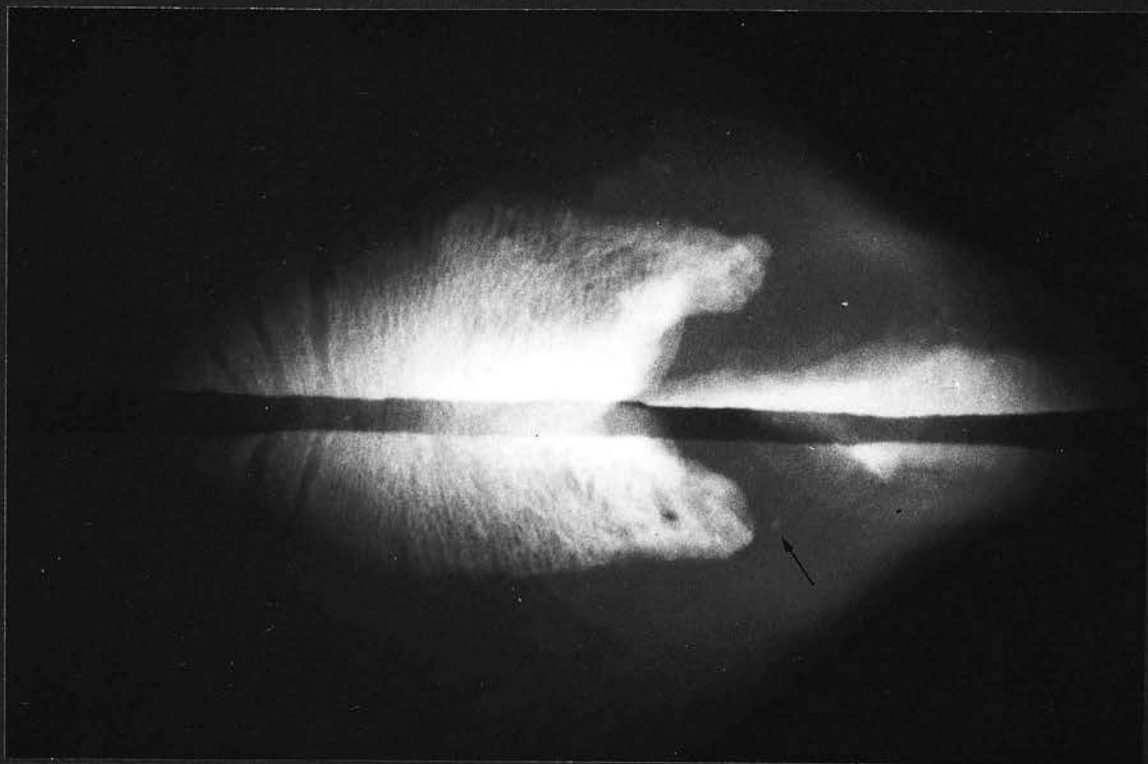


Figure 39 - Radiograph of NHM cartilage of 16 years Exmoor pony showing a bony island at the level of the distal plantar process (arrow). ( $\times 1.25$ ).

Figure 40 - Radiograph of NFL cartilage of 20 years riding pony. Note the shape, size and distance of the bony island from the distal palmar process (arrow).



Figure 41 - Radiograph of OHL cartilage of 17 years Shetland pony. Note the size, shape and distance of the multiple islands from the distal plantar process (arrow). (X 1.50).

Figure 42 - Photomicrograph of transverse section in the NFM distal palmar process of 15 years Thoroughbred horse. Note the location of the bony island (arrow). (X 5)

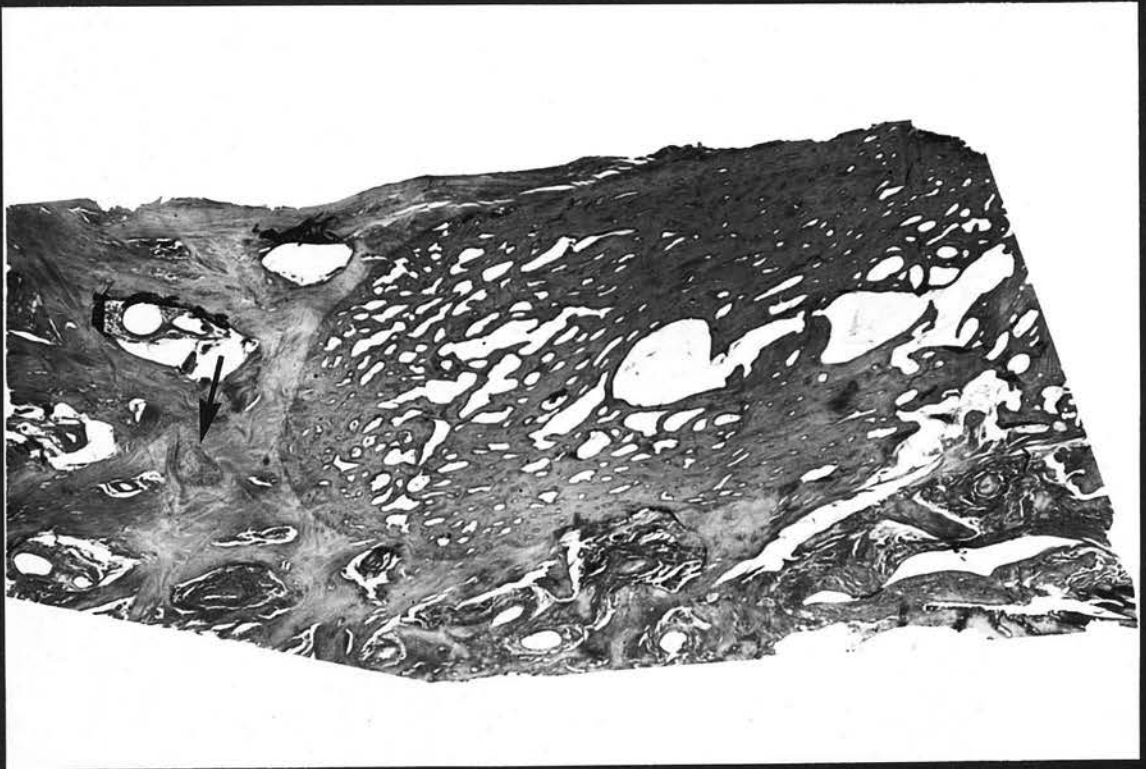
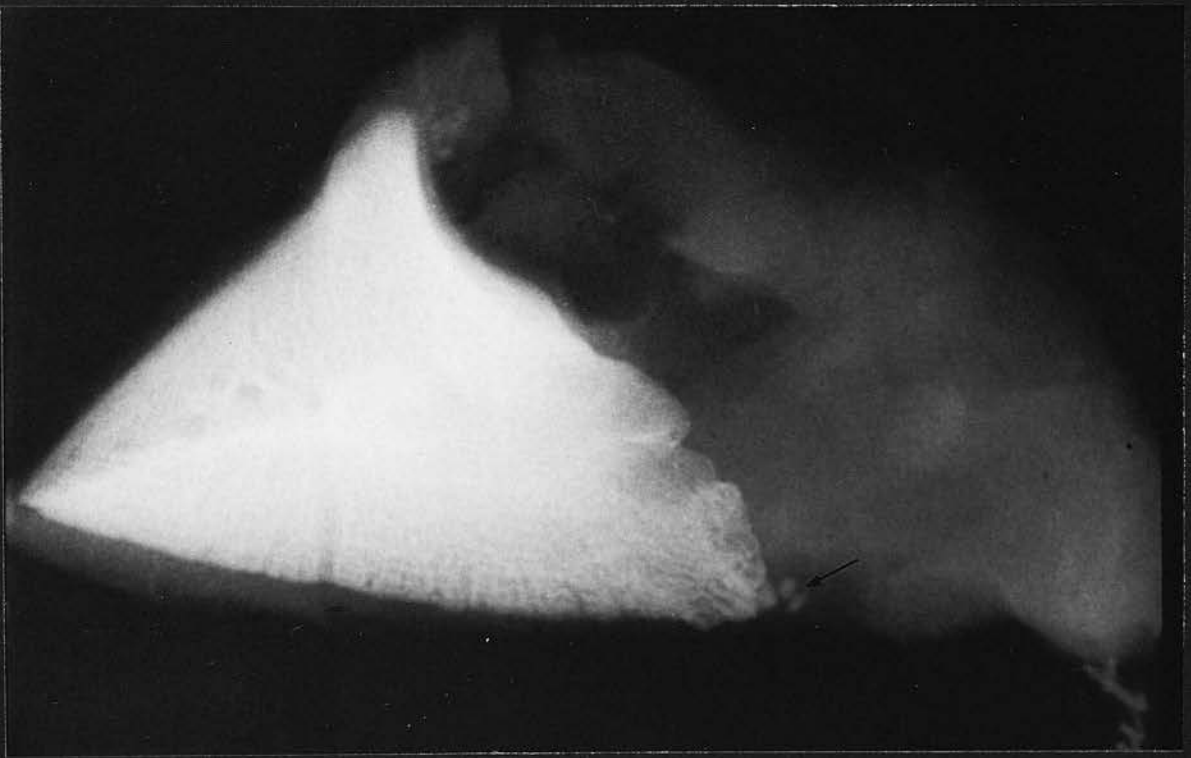


Figure 43 - Radiograph of OF foot of 16 years Exmoor pony showing the dense area (arrow). ( X 1.25 ).



Figure 44A-C. A radiograph of the medial OH third phalanx sectioned transversally at various thicknesses. (X 0.50).



The single feathers  
from the sole  
6mm.

Including all  
the feathers on the  
6mm.

A

1

2

3

4

5

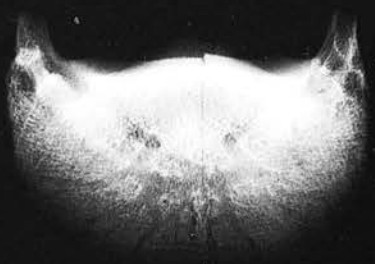


B

C

Figure 45A-D. Radiographs of the boiled PIII of the foot shown in Fig.43.  
The white arrow illustrates the notch. (X 0.66).

L M



A



B



C

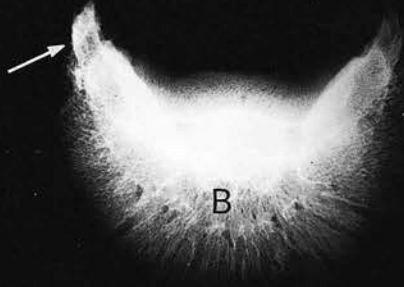
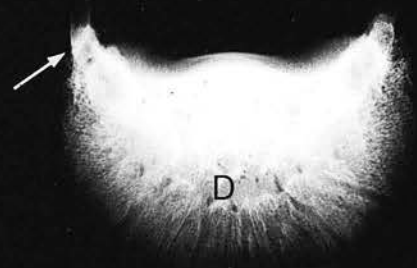


D

Figure 46 - Radiographs of OF third phalanx of 4½ years Clydesdale horse exposed at different degrees of inclination:- A) flat on the ground, B) 60, C) 70, D) 80 and E) 90 degrees raised from the ground at the toe. (X 0.50).

L

M



E

B

A

D

C

Figure 47A-E. Radiographs of PIII shown in Fig. 46, X-rayed at the same degrees of inclination after removing the bony bridge. ( $\times 0.50$ ).

L

M

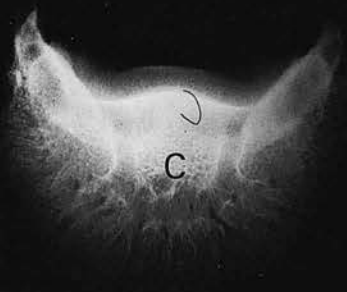
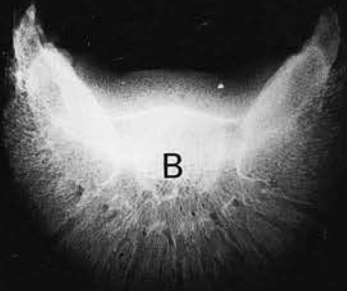


Figure 48 - Radiograph of OFL half foot of 12 years hunter in which the site of the bruise (at the angle of the bar) was excavated and filled with a paste of Barium sulphate.



Figure 49 - Photomicrograph of transverse section in the NF foot of 5 months Thoroughbred fetus showing the direct continuation of the cartilage of the hoof (a) with the cartilage of the proximal palmar process of PIII (b); the cartilage canals (c) and the laminae of the wall (d). (X 4)

Figure 50 - Higher magnification at the direct continuation of the cartilage of the hoof (a) with the cartilage of the proximal palmar process of PIII (b), of the same animal shown in Fig. 49. It shows that the proximal palmar process of PIII is of hyaline nature and the cartilage of the hoof is of fibrous nature with no sharp line of demarcation between them. The perichondrium (c), of the latter, sends fibres into different parts of the cartilage substance. (Haematoxylin and Van-Gieson X 70)

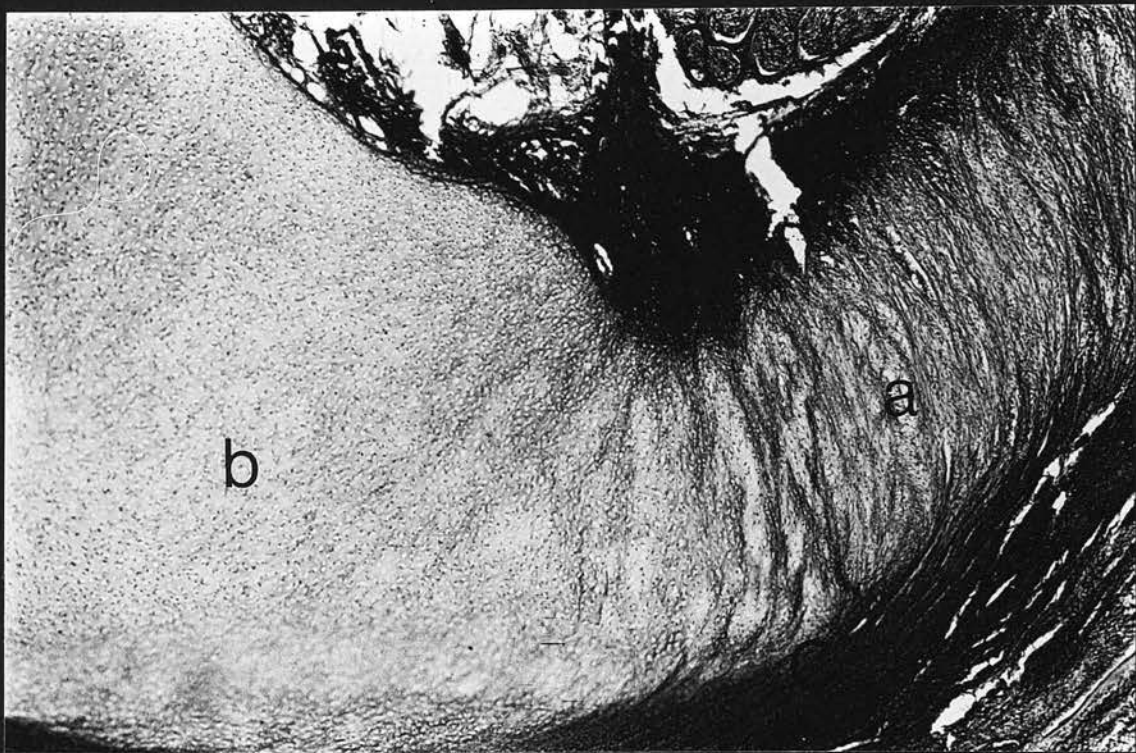
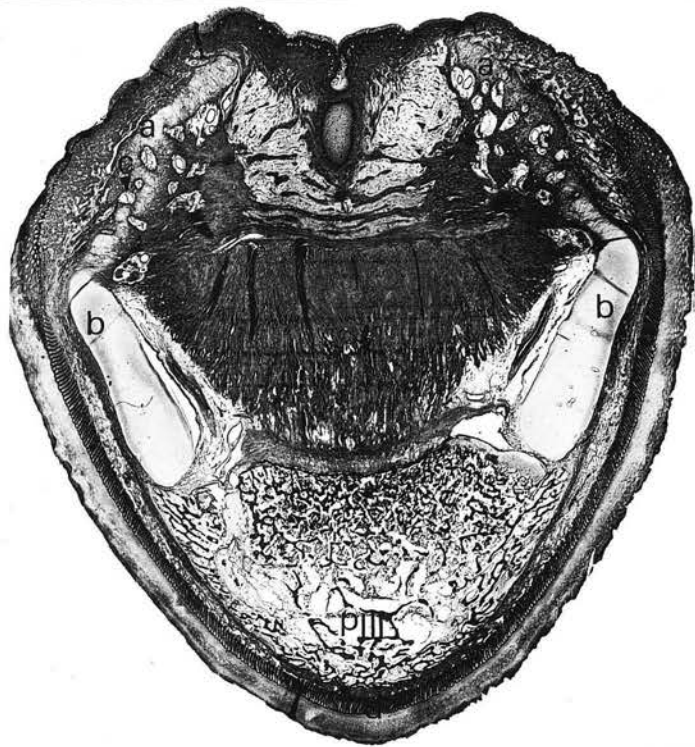


Figure 51 - Transverse section in the NFM cartilage of the hoof (a) of 9 months Exmoor fetus showing a cartilage canal (b) through which the perichondrium (c) of both surfaces meet. (Haematoxylin and Eosin X 70).

Figure 52 - Transverse section in the NFL cartilage of 6 months old Thoroughbred foal. Note the direction and arrangement of the collagenic fibres and the chondrocytes. (Haematoxylin and Van-Gieson X 175)

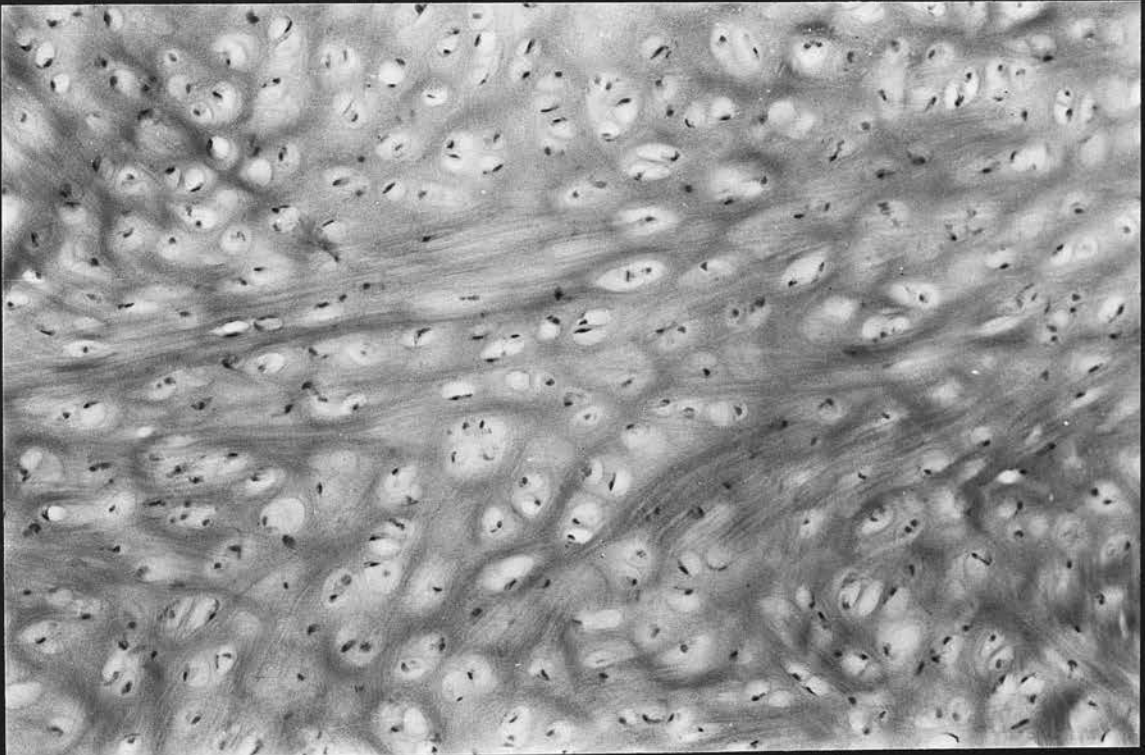
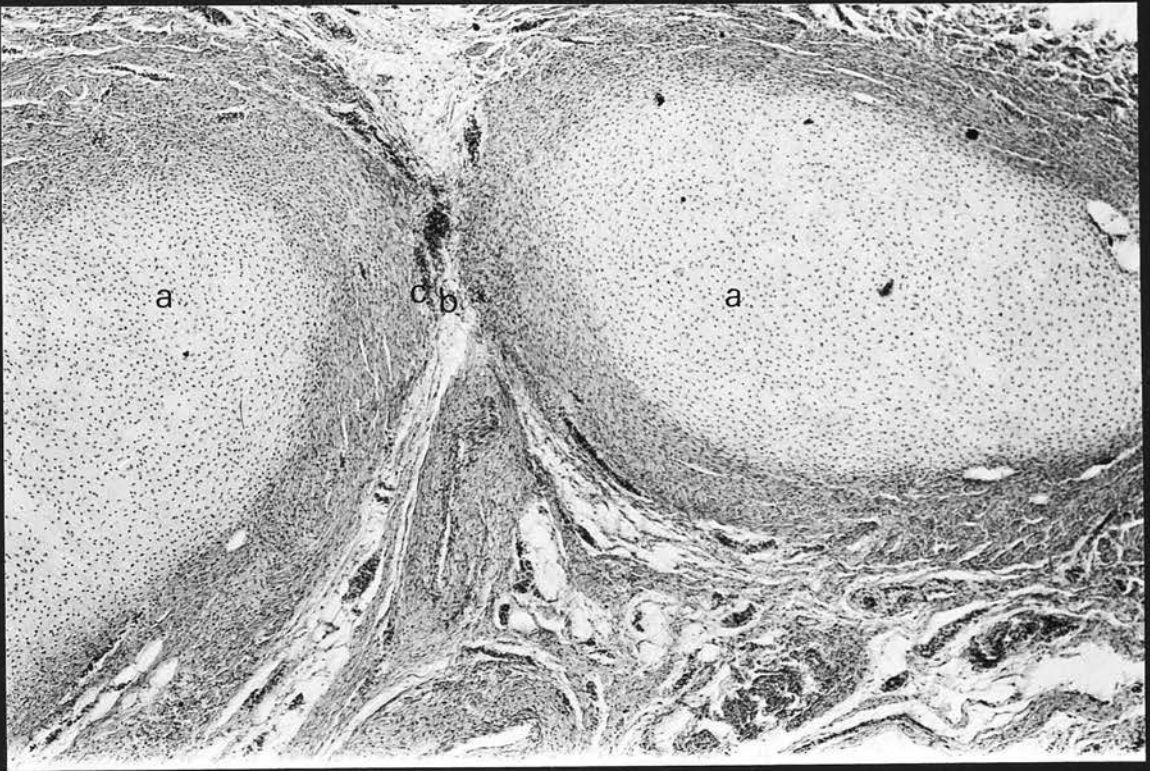


Figure 53 - Transverse section in the NFM cartilage of 9 months Exmoor fetus showing the elastic fibres (Verhoeff's stain X 132)

Figure 54 - Transverse section in the NHL cartilage of 2 days Arabian foal showing the elastic fibres. (Verhoeff's stain X 132)

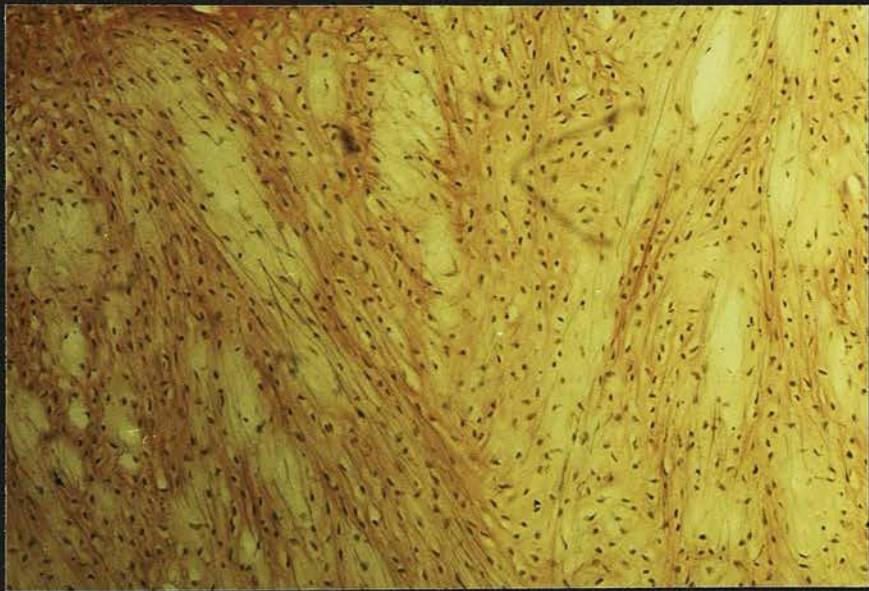
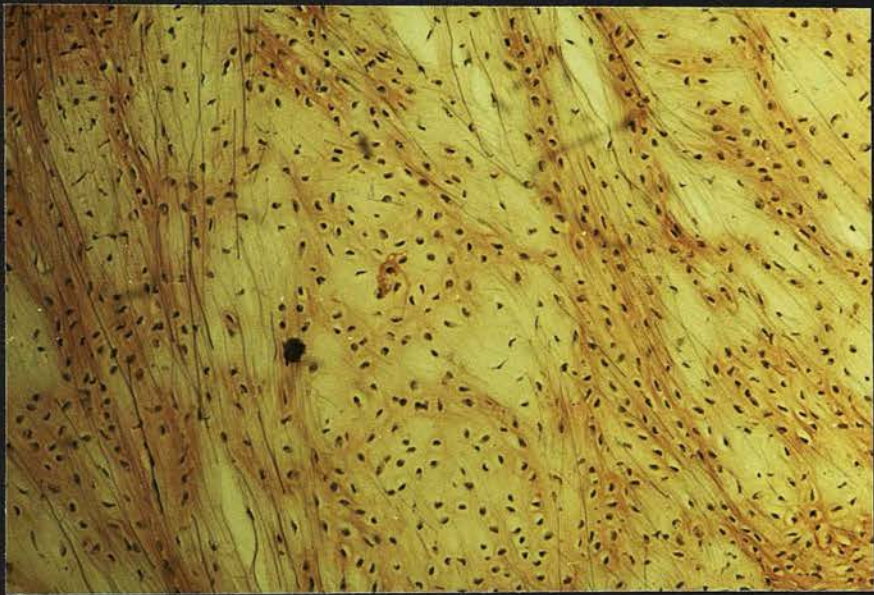


Figure 55 - Transverse section in the OFL cartilage of 2 months Thoroughbred foal showing the elastic fibres. (Verhoeff's stain X 132)

Figure 56 - Transverse section in the OHL cartilage of 6 months Thoroughbred foal showing the elastic fibres. (Verhoeff's stain X 132)

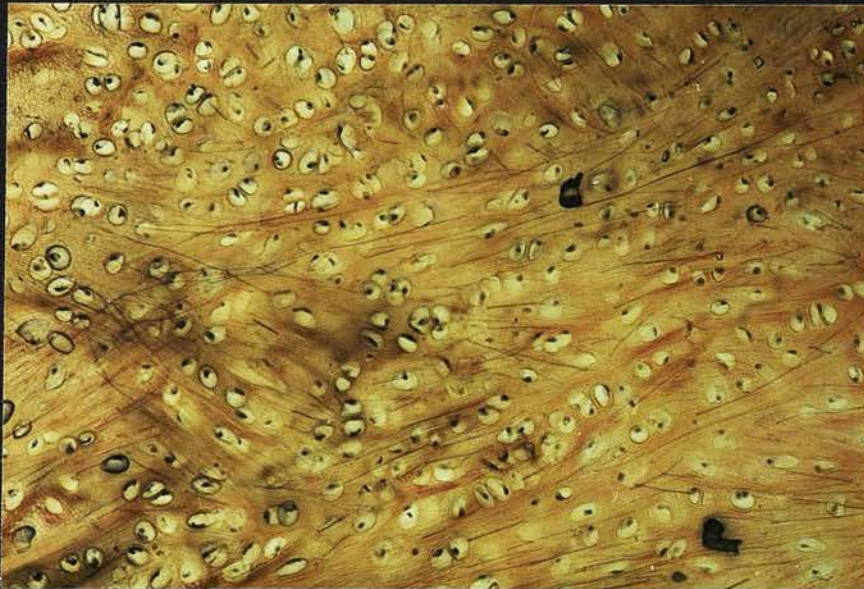
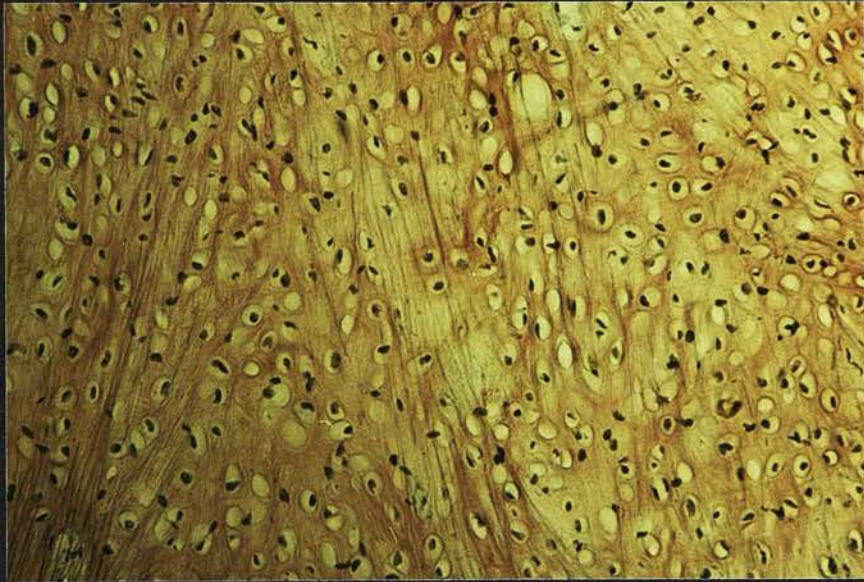


Figure 57 - Latero-vertical section in the OFL cartilage of 4 years Shetland pony showing the elastic fibres. (Verhoeff's stain X 132)

Figure 58 - Vertical section in the OHM cartilage of 7 years Welsh pony showing the elastic fibres and a calcified matrix. (Verhoeff's stain X 132)

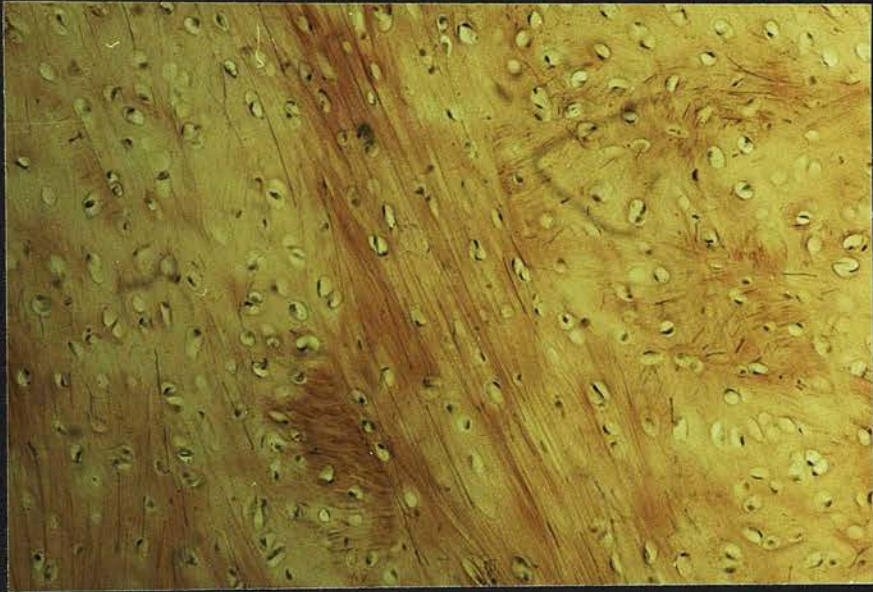


Figure 59 - Vertical section in the OHL cartilage of 15 years Shetland pony showing the elastic fibres. (Verhoeff's stain X 132)

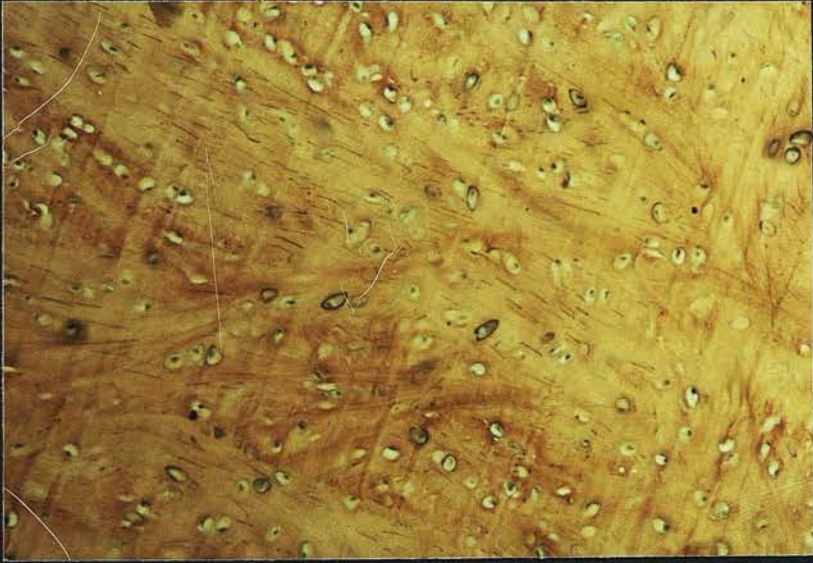
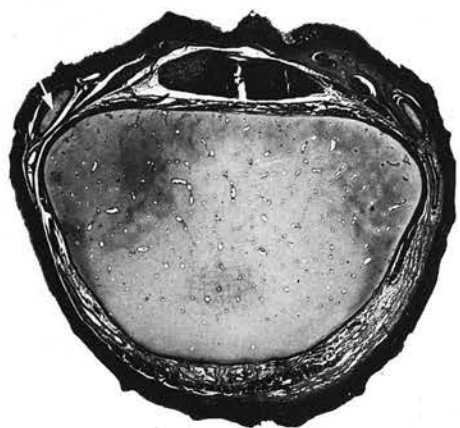
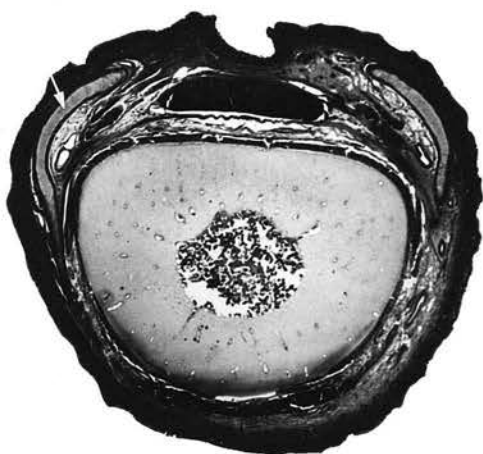


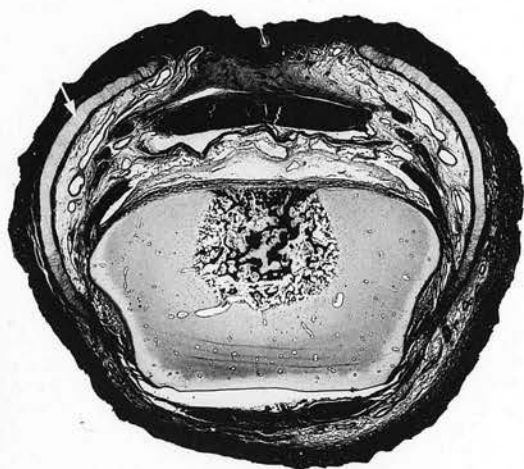
Figure 60 A-D - Photomicrographs of transverse sections in the NF foot of 5 months Thoroughbred fetus, cut at the level of the coronary band, showing the cartilage (arrows) and the cartilage canals in (D). (X 3)



A



B



C



D

Figure 61 - Transverse section in the NHM cartilage of 14 days Thoroughbred foal showing a cartilage canal. (Verhoeff's stain X 132)

Figure 62 - Transverse section in the NFL cartilage and part of PIII of 6 months Thoroughbred foal showing bony invasion into the fibro-elastic cartilage at the right side while the hyaline cartilage (left side) is still not fully ossified. (Haematoxylin and Van -Gieson X 70)

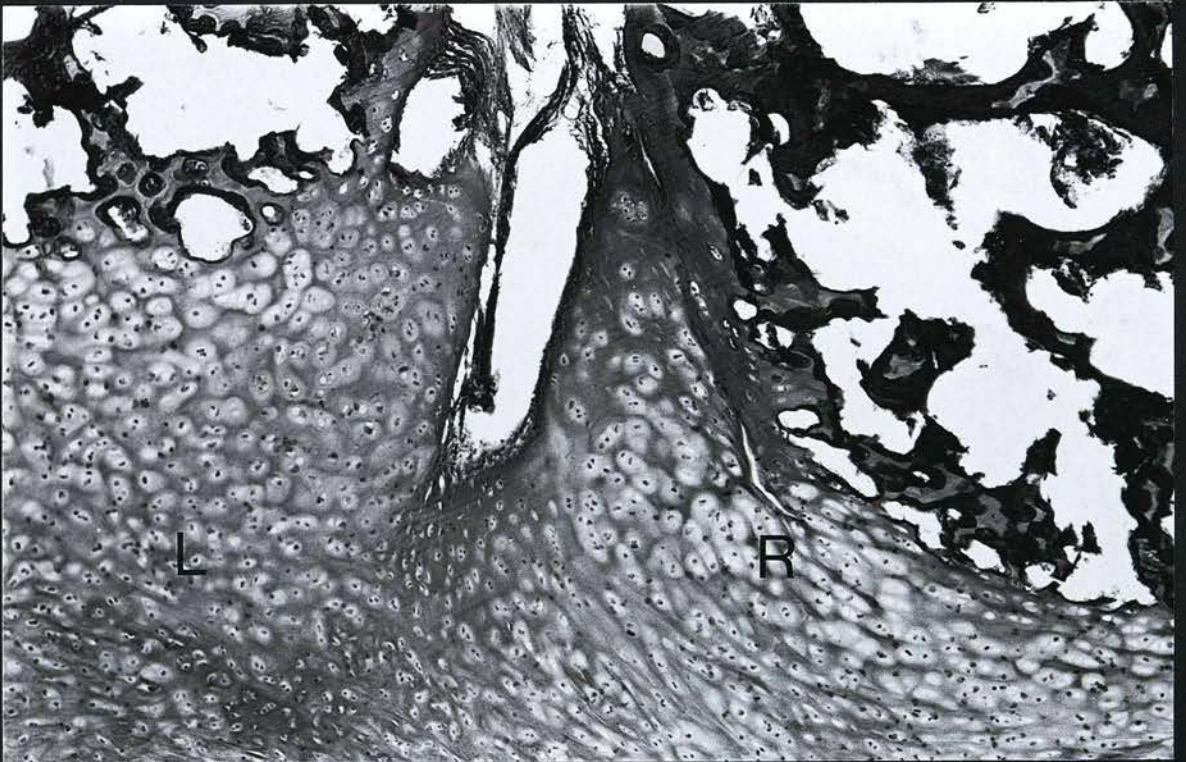


Figure 63 - Transverse section in the OFM cartilage of 7 months Exmoor pony. Note the active invasion of the cartilage by bone forming cells. (Haematoxylin and Van-Gieson X 70)

Figure 64 - Transverse section in the NFM cartilage of 6 months thoroughbred x connemara foal. Note the active invasion of the cartilage by bone forming cells. (Haematoxylin and Eosin X 70)

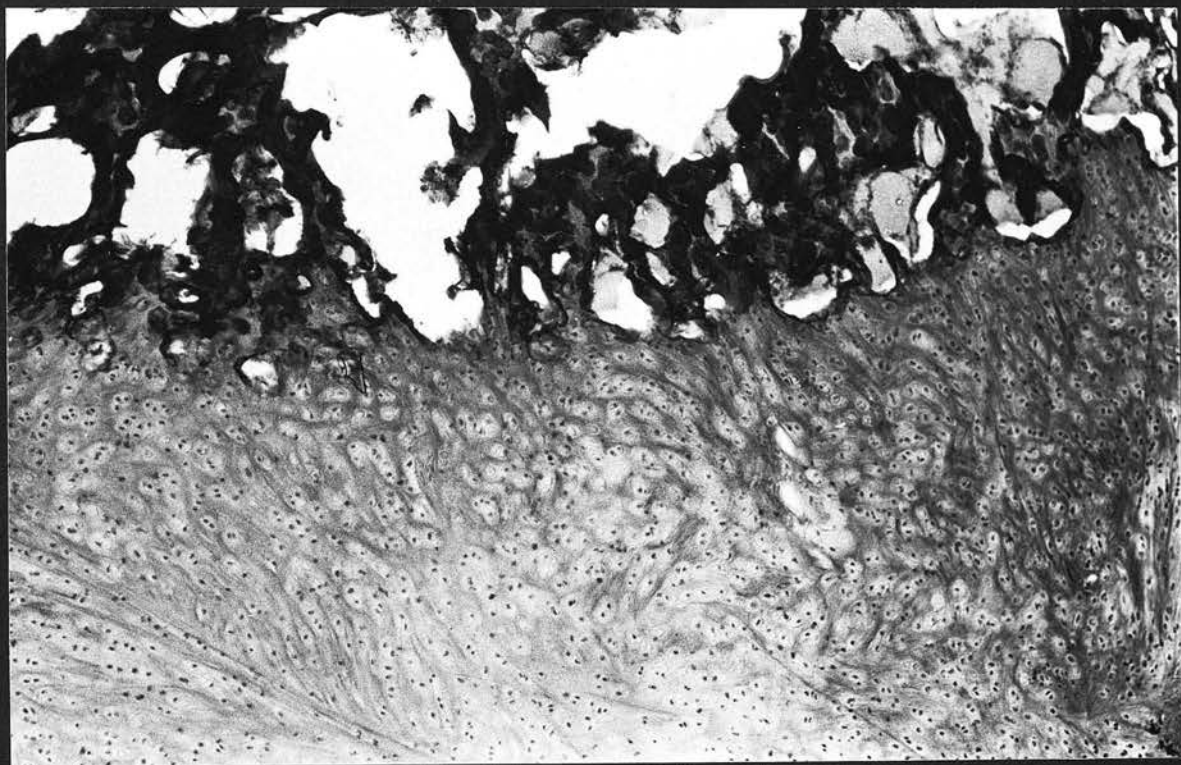


Figure 65 - High magnification in part of Fig. 64 shows the osteoblasts (a) lining the bone cavities with the osteoclasts (b) in the Howship's lacunae. (Haematoxylin and Eosin X 700)

Figure 66 - Radiograph of OFL cartilage in 6 months Thoroughbred x Connemara foal showing bony invasion (arrow) into the cartilage of the hoof. (X 1.50).

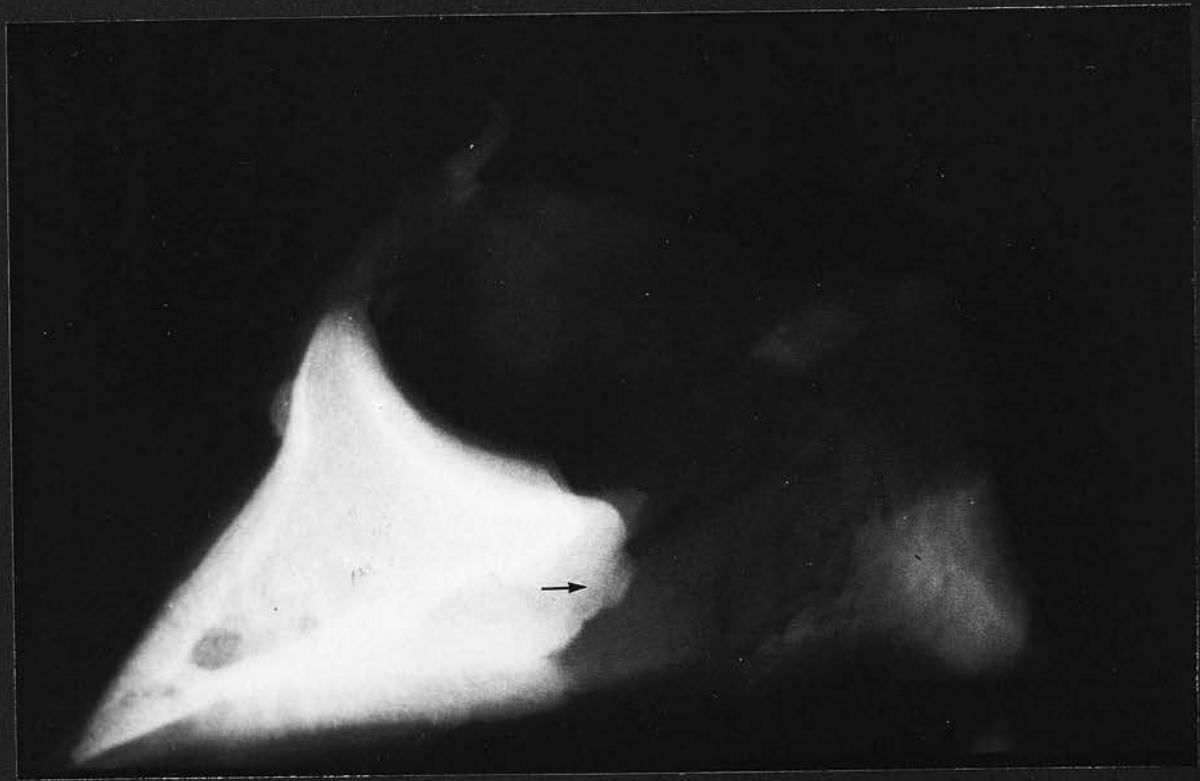
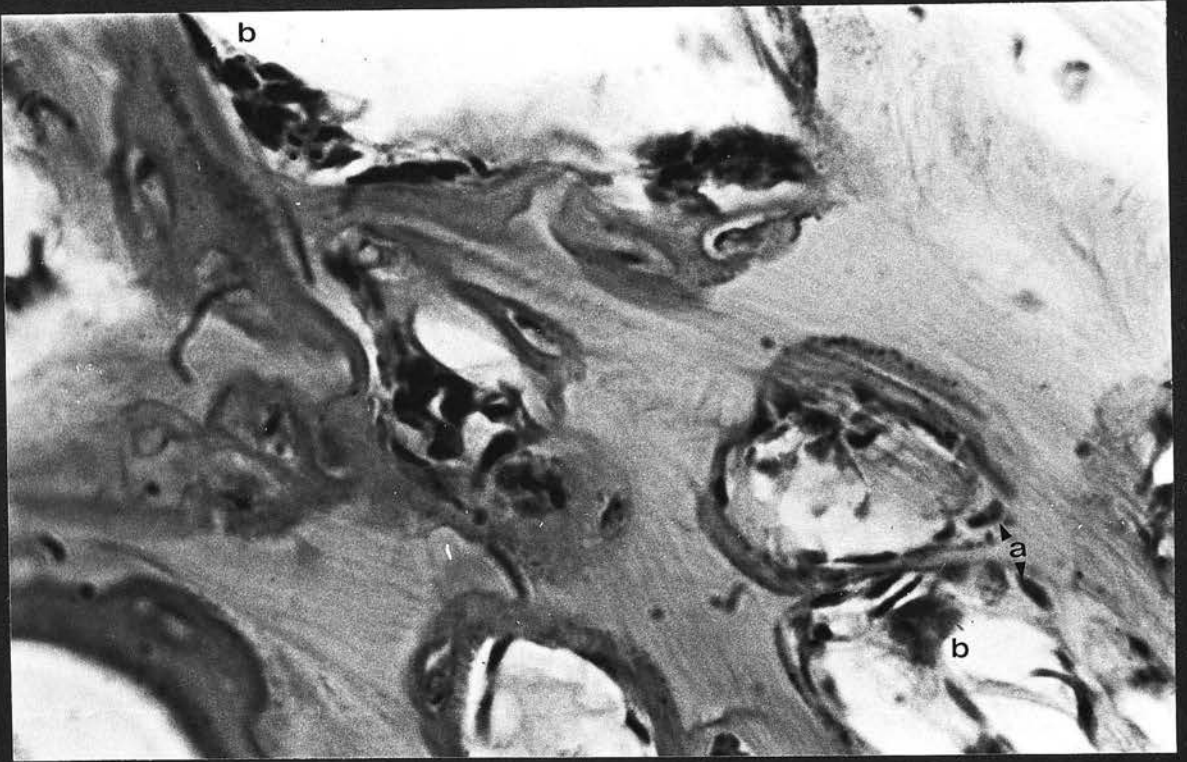


Figure 67 A-D - Photomicrographs of transverse sections in part of the OHM cartilage of the hoof (a) and PIII of 8 months Exmoor pony. Note the way and the direction of the bony invasion into the cartilage (arrow). (X 3)

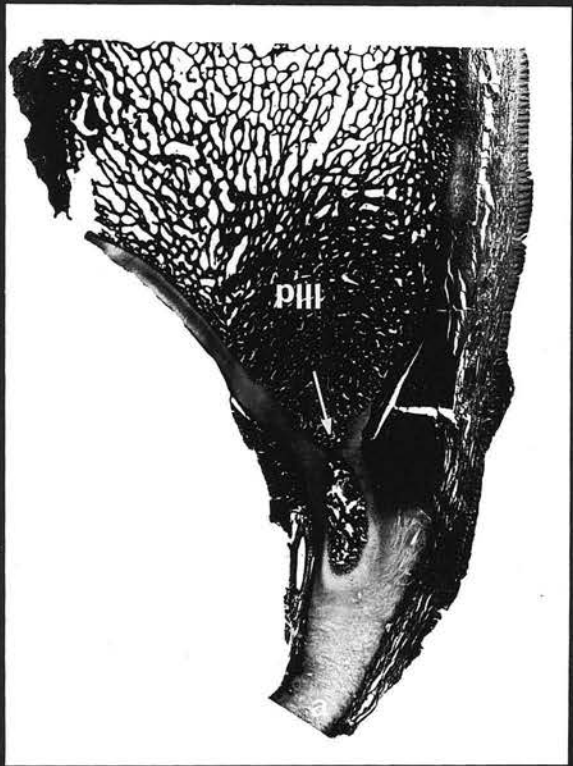
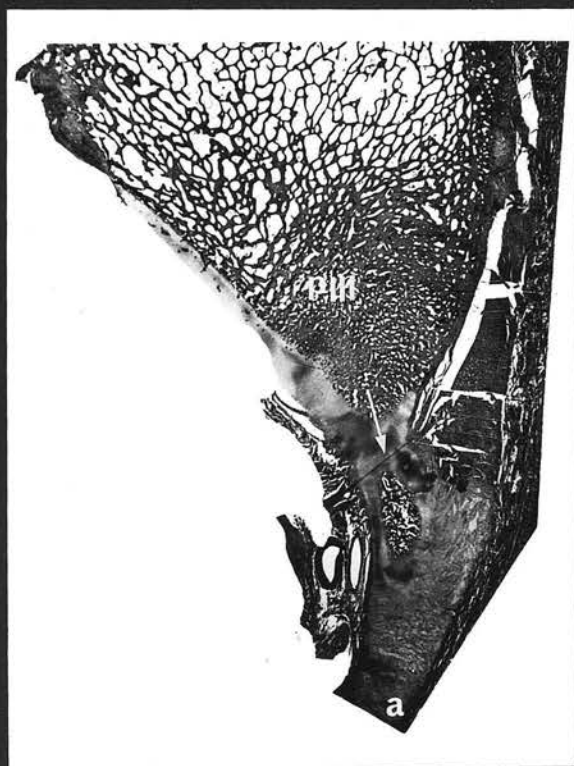
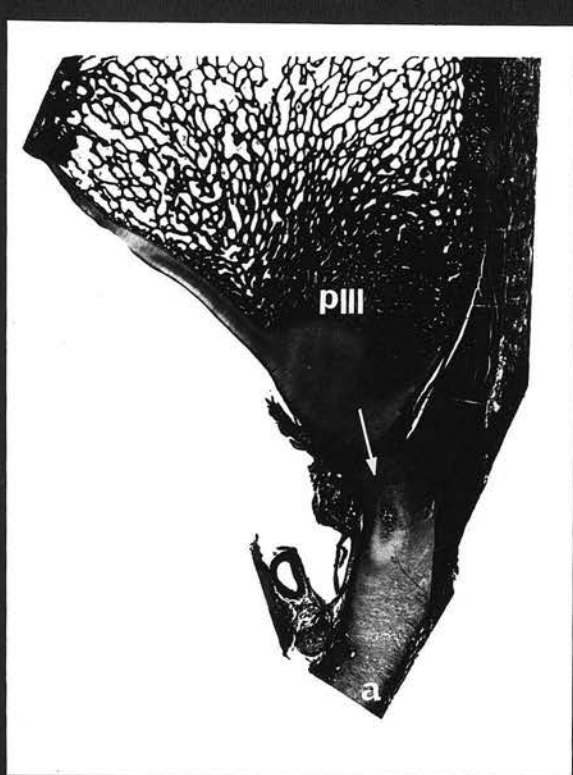
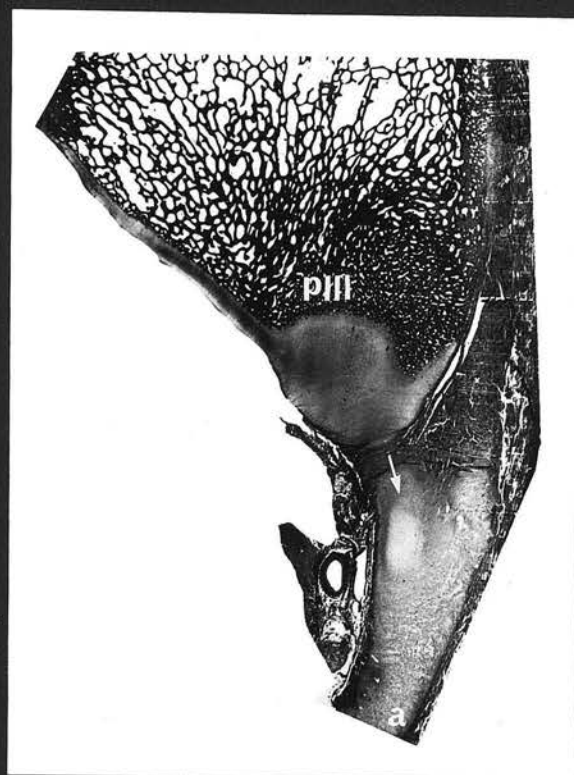


Figure 68 - High magnification of the lighter area shown by the arrow in Fig. 67A. Note the resting and the proliferative zones of chondrocytes. (Haematoxylin and Van-Gieson X 70)

Figure 69 - High magnification of the whole field of the bony invasion and its feature shown in Fig. 67B. (Haematoxylin and Van-Gieson X 70)

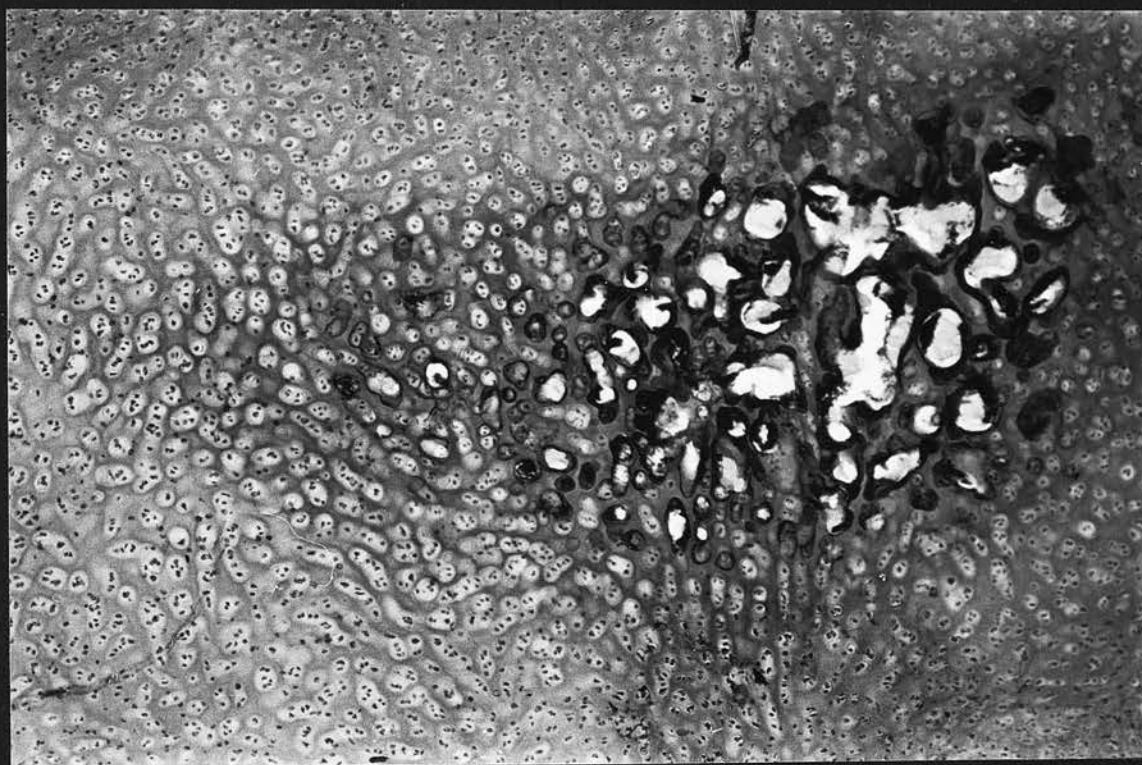
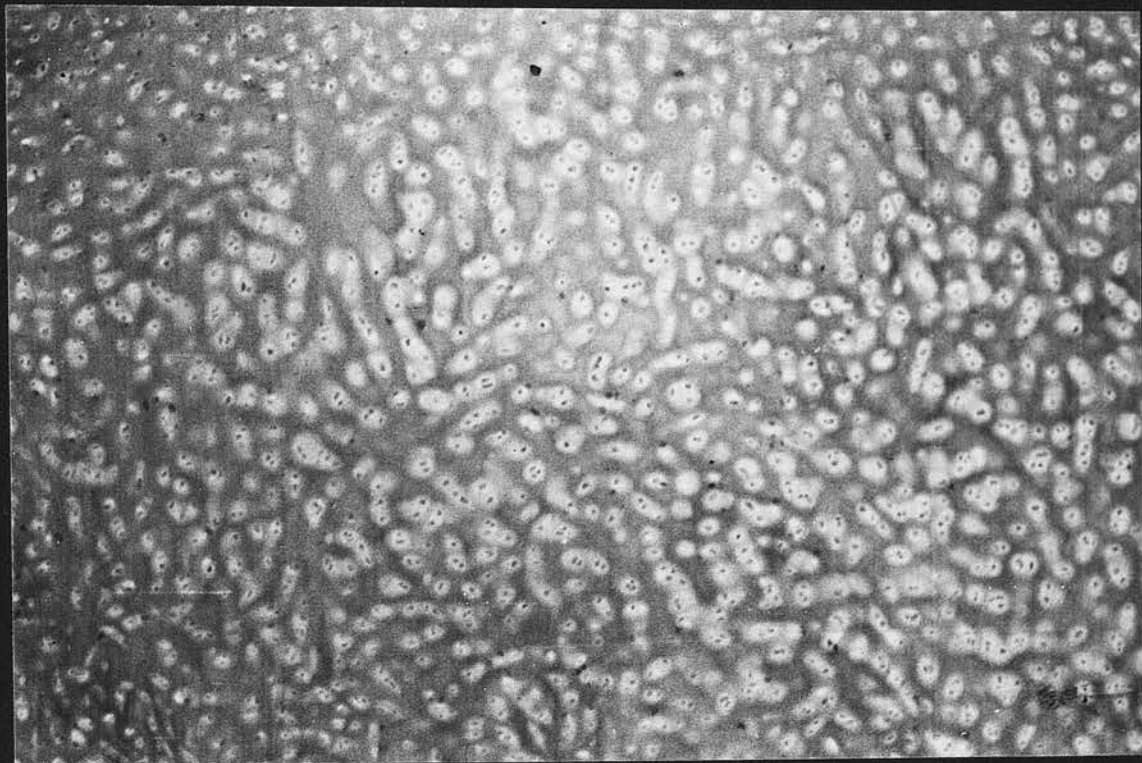


Figure 70 - Higher magnification of part of the field shown in Fig. 69.  
Note the dissolution of the calcified matrix with its chondrocytes  
leaving cavities. (Haematoxylin and Van-Gieson X 175)

Figure 71 - High magnification of part of the field of the bony invasion  
and its feature shown in Fig. 67D. (Haematoxylin and Van-Gieson X 70)

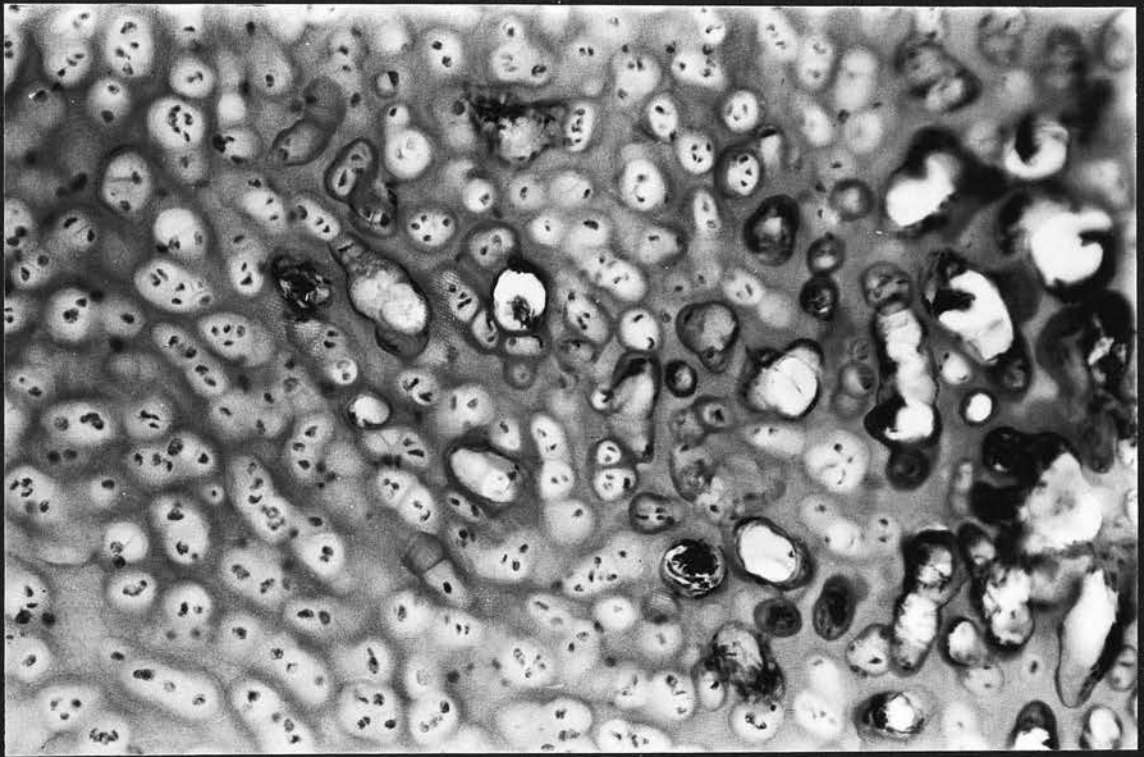


Figure 72 - High magnification of part of the field shown in Fig. 67C shows the thin bony trabeculae (a) with calcified cartilage cores (b).

(Haematoxylin and Eosin X 700)

Figure 73 - High magnification of vertical section in the OFL ossified cartilage of 3 years Thoroughbred horse. Note the osteoblasts (a) lining the thin bony trabeculae (b), osteoclast (c) in the Howship's lacunae and the calcified cartilage core (d). (Haematoxylin and Eosin X 700)

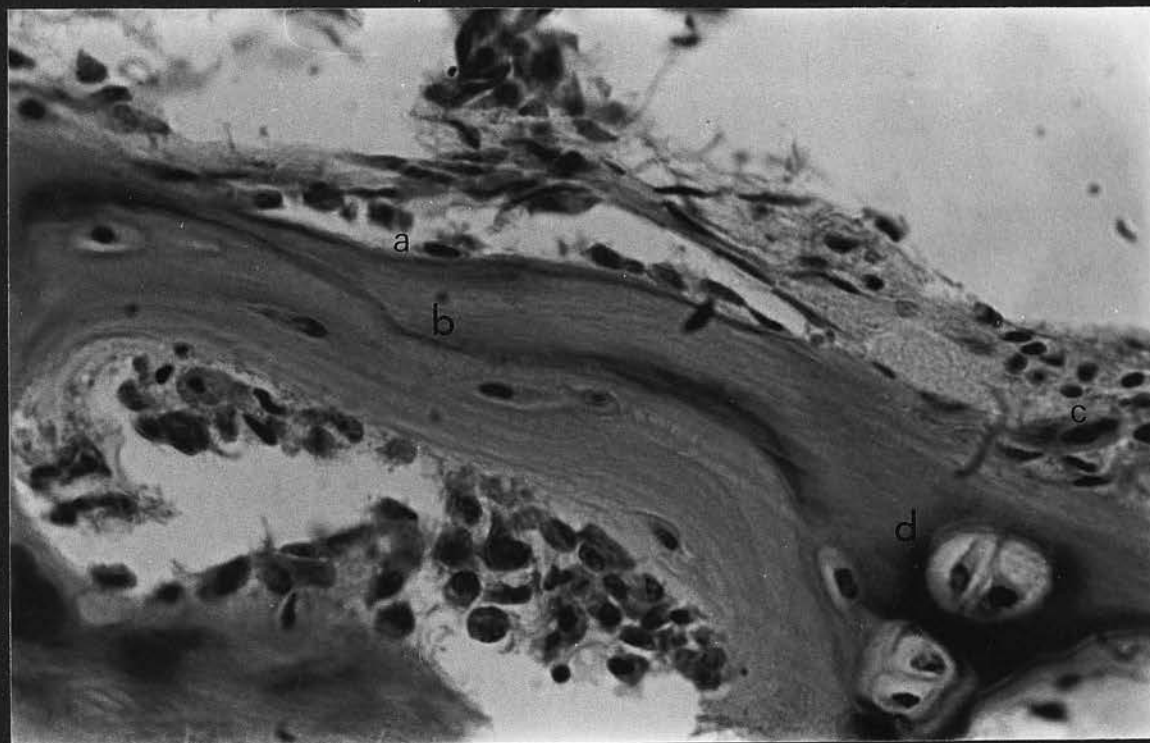
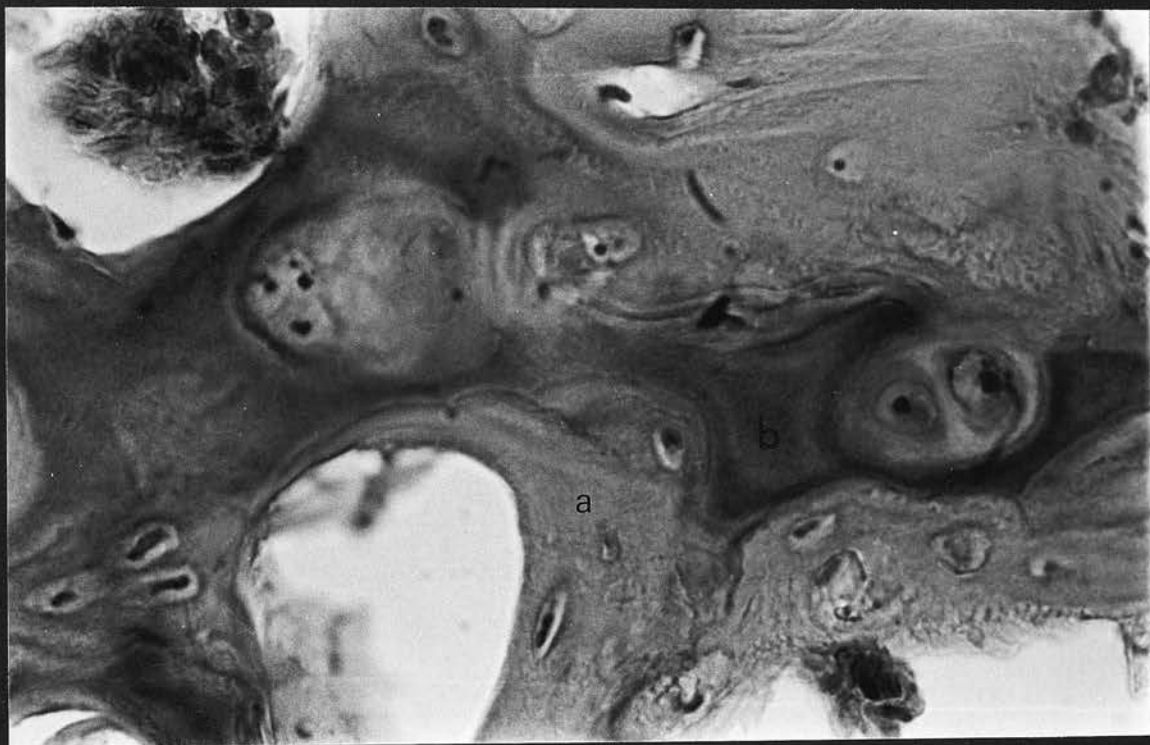


Figure 74 - Vertical section of the same cartilage shown in Fig. 73 showing the same osteogenic features of the described cases. (Haematoxylin and Eosin X 70)

Figure 75 - Vertical section in the OHM cartilage (a) of 17 years Shetland pony. Note the tubular spongiosa (b) with the trabecular spaces filled with fatty cells (c). (Haematoxylin and Eosin X 70)

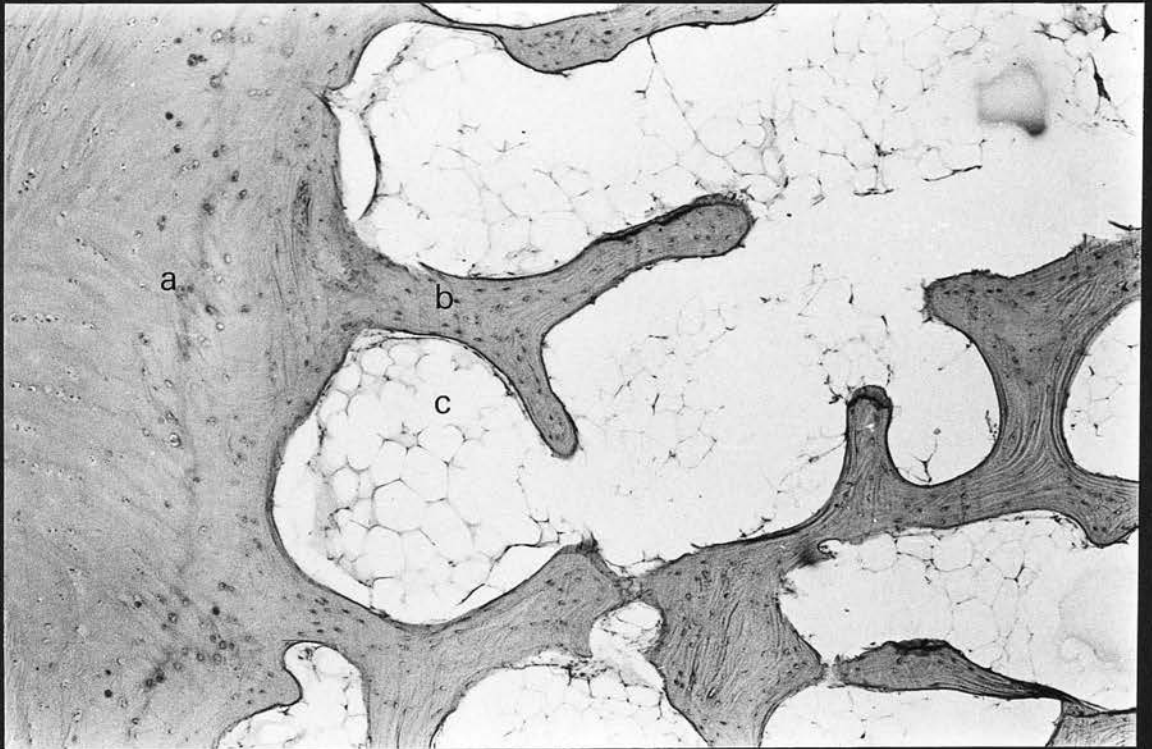
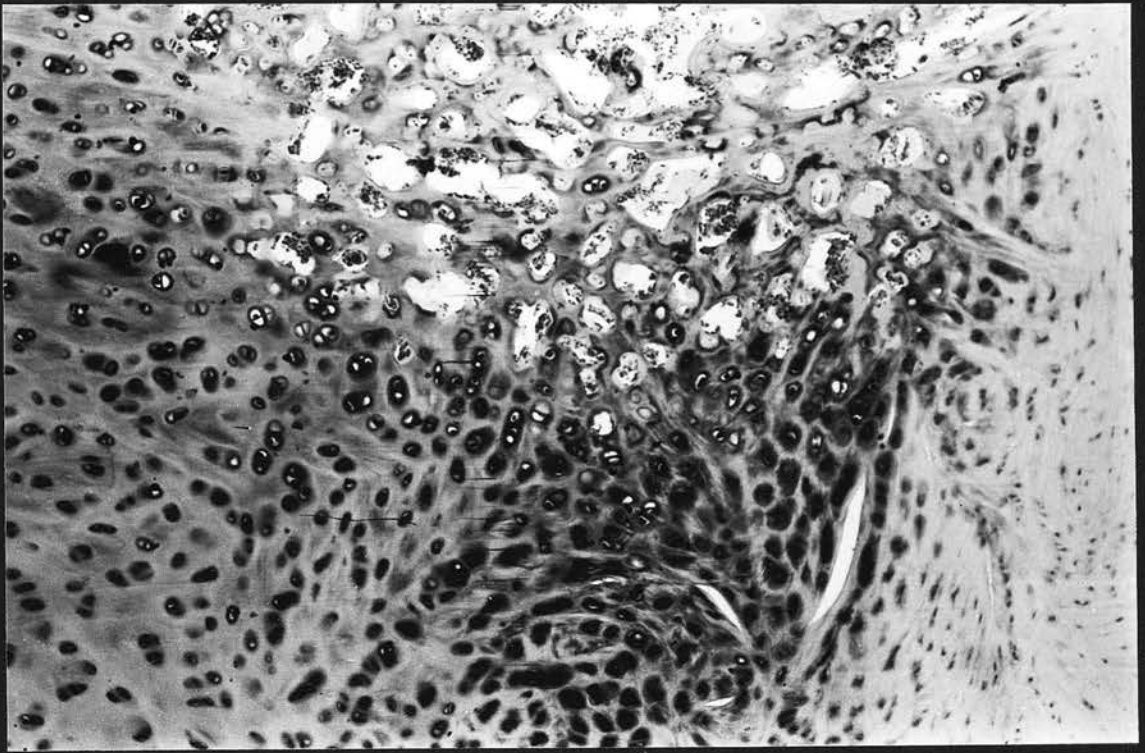


Figure 76 - Vertical section in the NFM ossified cartilage of 7 years highland pony with long side bone. Note the tubular spongiosa (a) and its tendency to develop a compact bone (b). (Haematoxylin and Eosin X 70)

Figure 77 - Vertical section in the OHL ossified cartilage of 2 years Thoroughbred horse. Note the direction of the Sharpey's fibres (arrow). (Haematoxylin and Van-Gieson X 70)

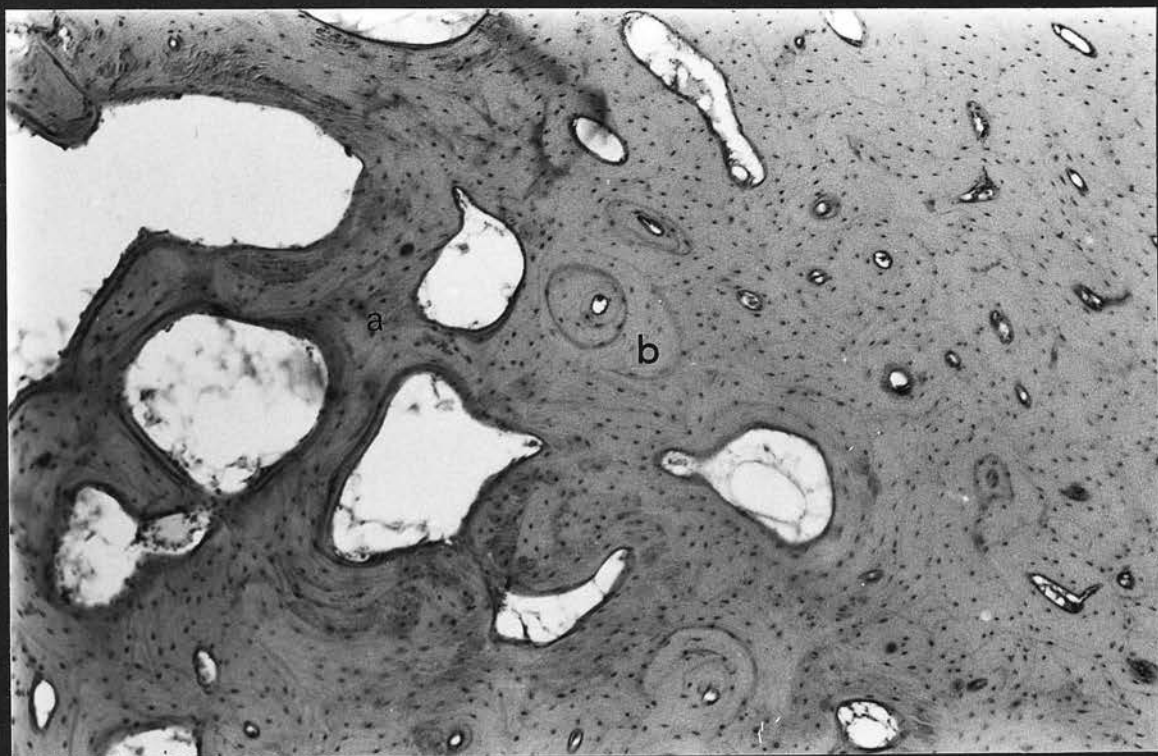


Figure 78 - Photomicrograph of vertical section in the NHM cartilage of the hoof (a) and part of PIII of 8 months thoroughbred foal. Note the extent of the bony invasion (b) into the cartilage. (X 4)

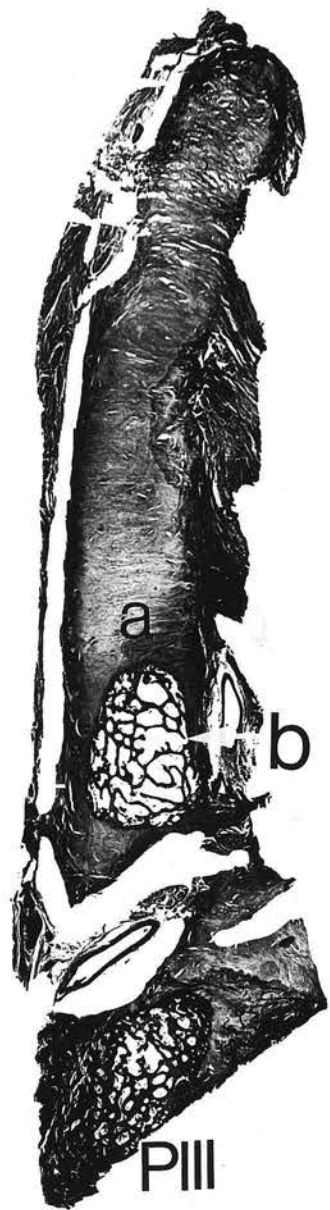


Figure 79 - Vertical section of a bony island in the OFL cartilage of 5 years Thoroughbred horse. Note the resting (a), the proliferative (b) and the mature zones with early bony invasion (c). (Haematoxylin and Van-Gieson X 70)

Figure 80 - Vertical section of the same bony island in Fig. 79. The osteoblasts clothe the exposed calcified cartilage plate (a) and the thin trabeculae contain cartilage cores (b). (Haematoxylin and Eosin X 70)

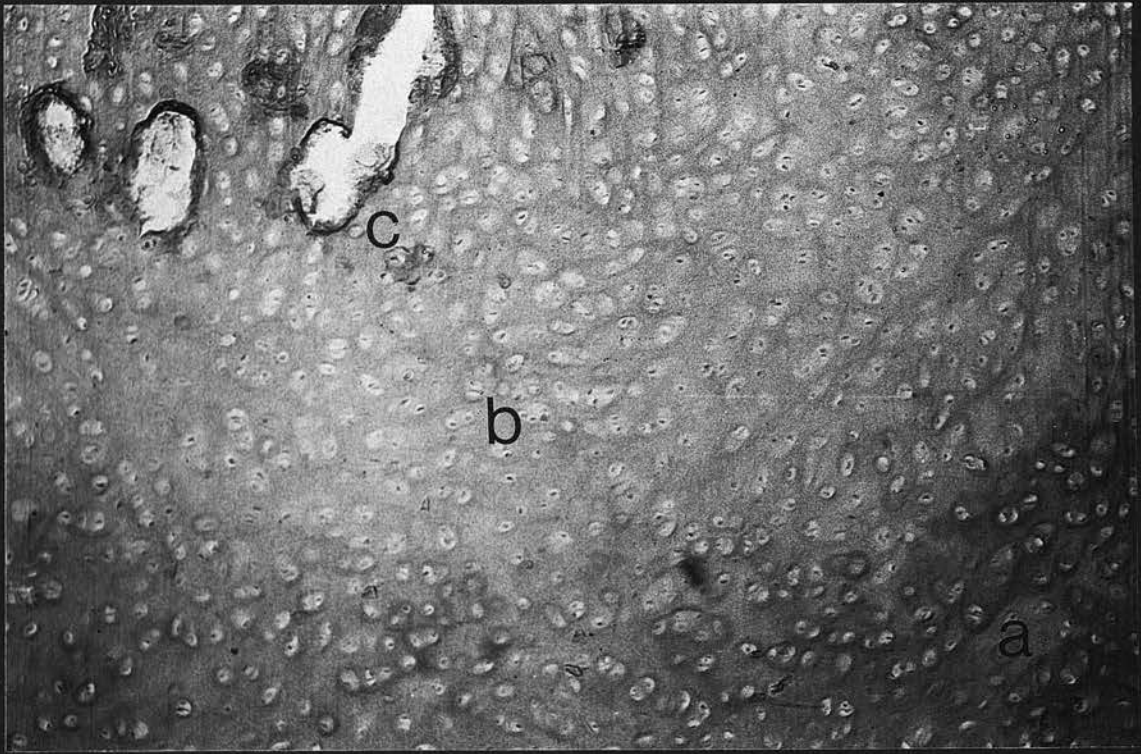


Figure 81 - Vertical section of a bony island in the NFM cartilage of 4 years heavy horse. The <sup>osteoclast</sup>~~giant cells~~ (arrow) found in areas where new bone formation is continuing. (Haematoxylin and Van-Gieson X 700)

Figure 82 - Transverse section of a bony island, in the OFL cartilage of 20 years fell pony, showing the tubular spongiosa. (Haematoxylin and Eosin X 175)

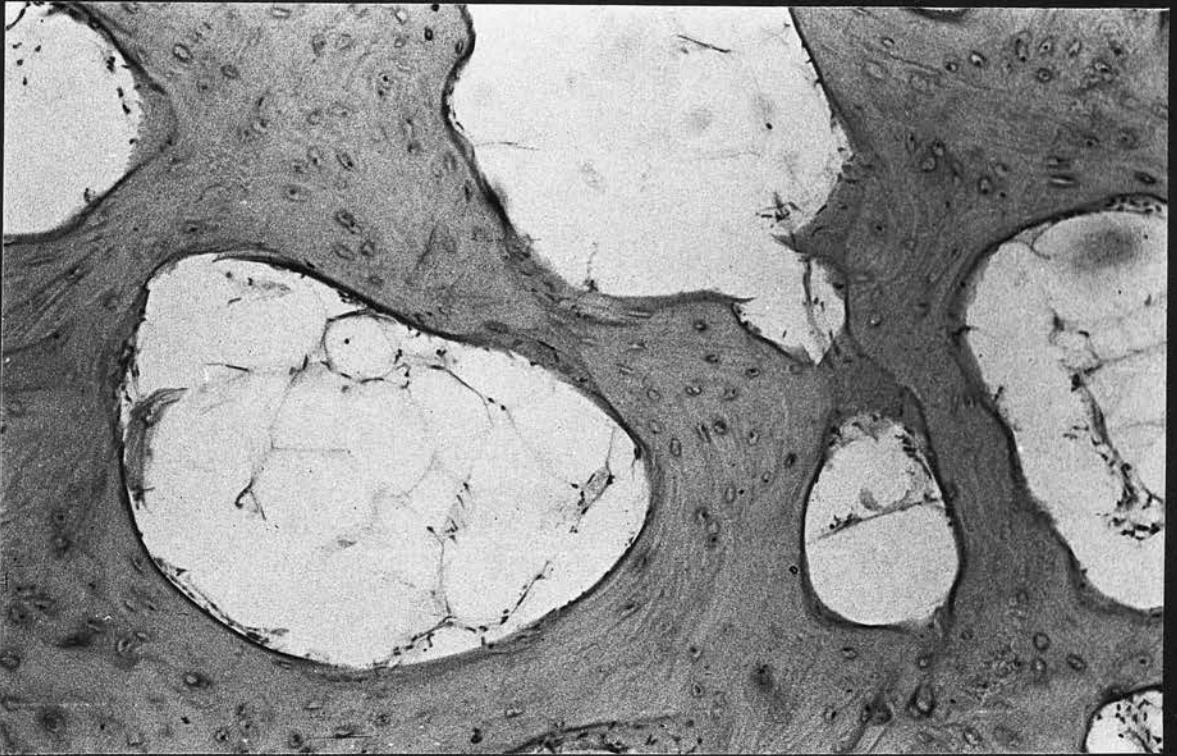
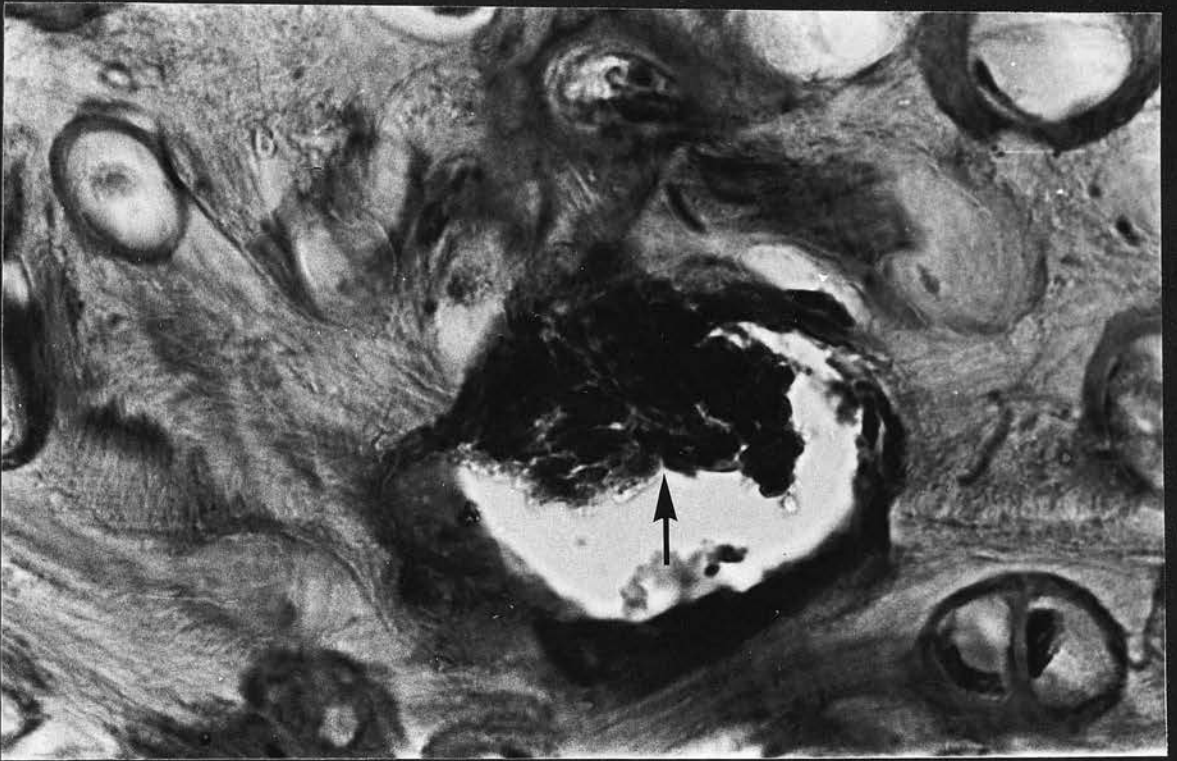


Figure 83 - Vertical section of a bony island in the OFM cartilage of 4 years heavy horse, showing the tubular spongiosa (a) and its tendency to form a compact bone (b). (Haematoxylin and Eosin X 70)

Figure 84 - Vertical section of a bony island in the NFM cartilage of the same animal shown in Fig. 83, showing new bony invasion in areas where the marrow cavities still contain mesenchymal cells. (Haematoxylin and Eosin X 175)

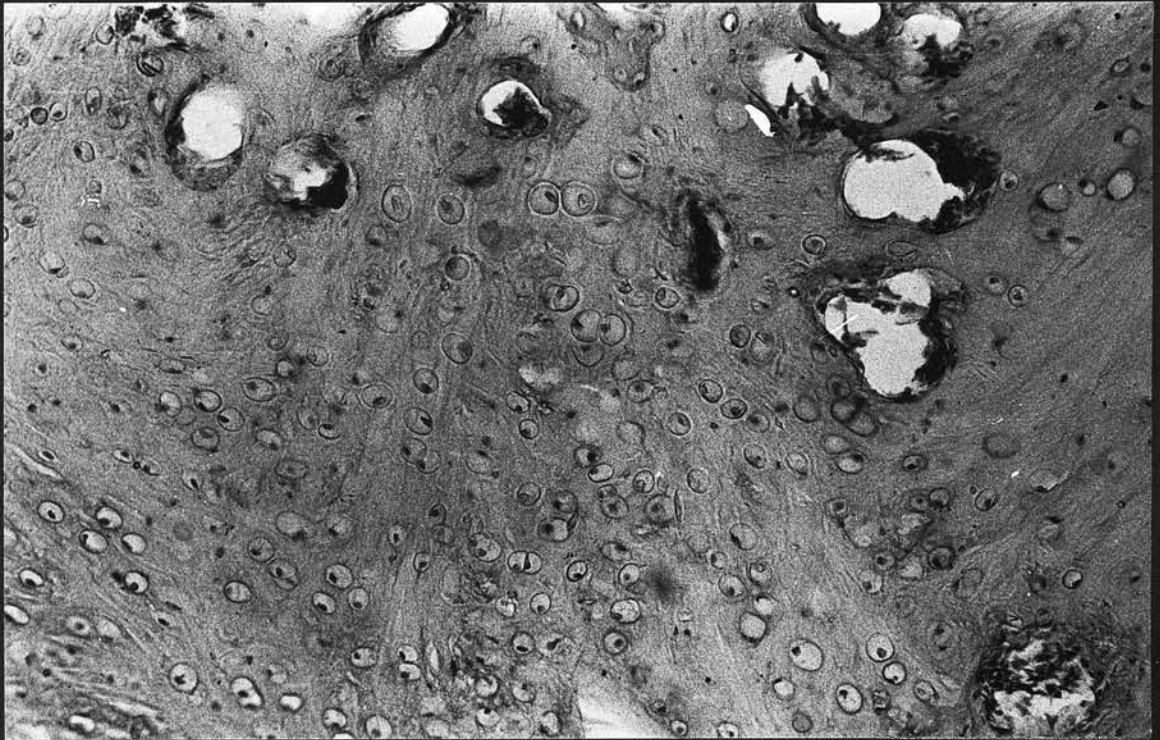


Figure 85 - Vertical section in the OFL cartilage of 5 years Thoroughbred horse (Fig. 86), showing the bony island (L) and side bone (R), both of which show new bony invasion, L and R, in time may join together.

(Haematoxylin and Van-Gieson X 70)

Figure 86 - Radiograph of OFM and L cartilages and their halves of PIII, of the same animal (Fig. 85), showing bony islands. OFL bony island gives a cock's comb shape and on radiological examination give the appearance of a fractured side bone. (X 0.50).

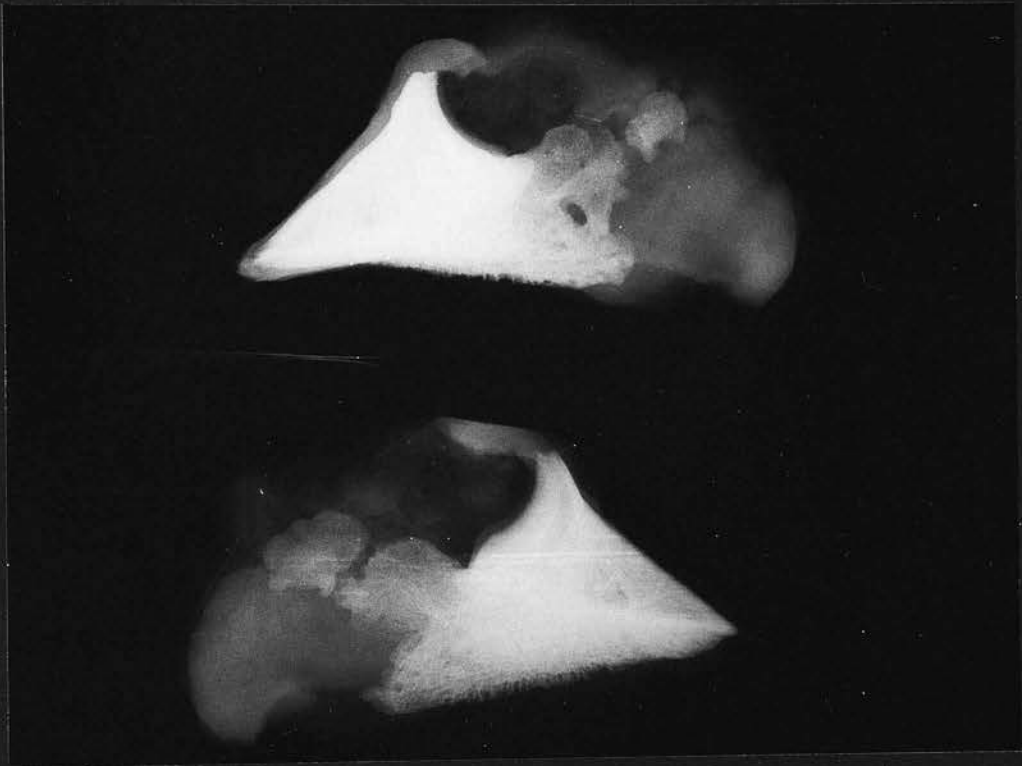
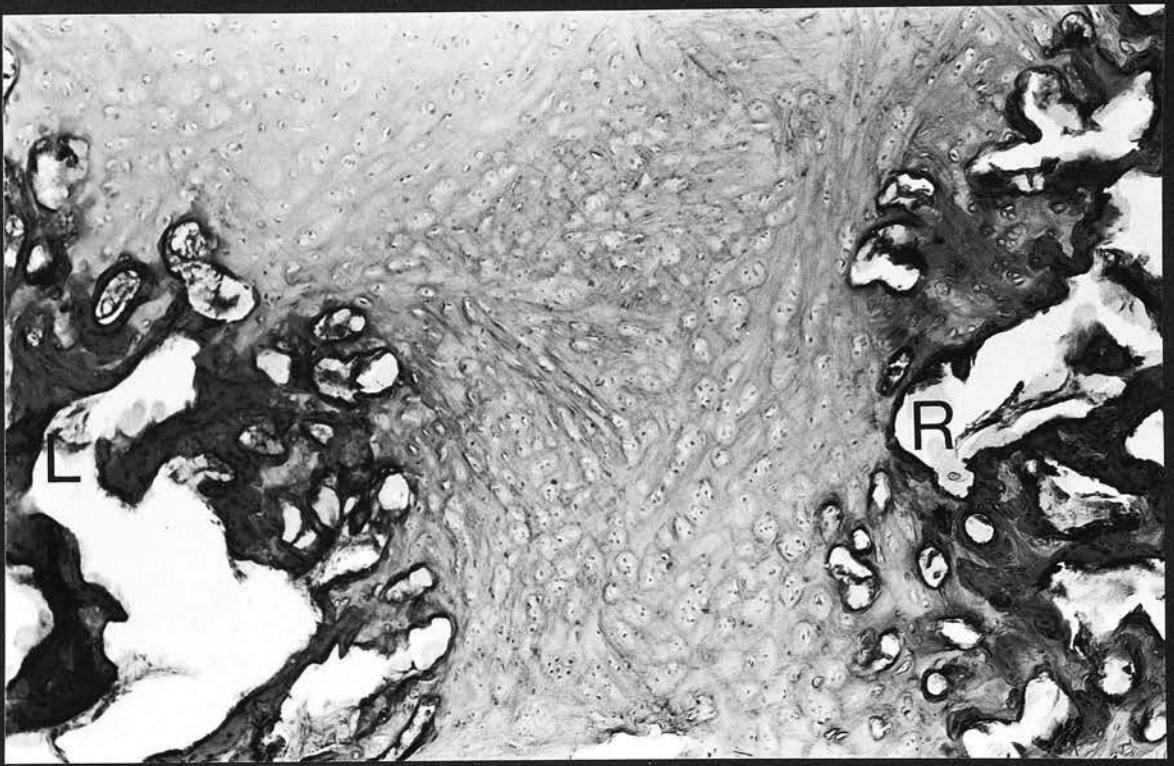


Figure 87 - Vertical section of a bony island in the NFL cartilage of 20 years heavy horse, showing no new bony invasion and the marrow cavities are filled with fatty cells. The cartilage canal (a) is included within the bony island (b). (Haematoxylin and Van-Gieson X 175)

Figure 88 - Vertical section of a bony island in the OFL cartilage of 5 years Thoroughbred horse shows same features as Fig.87 (Haematoxylin and Eosin X 70)

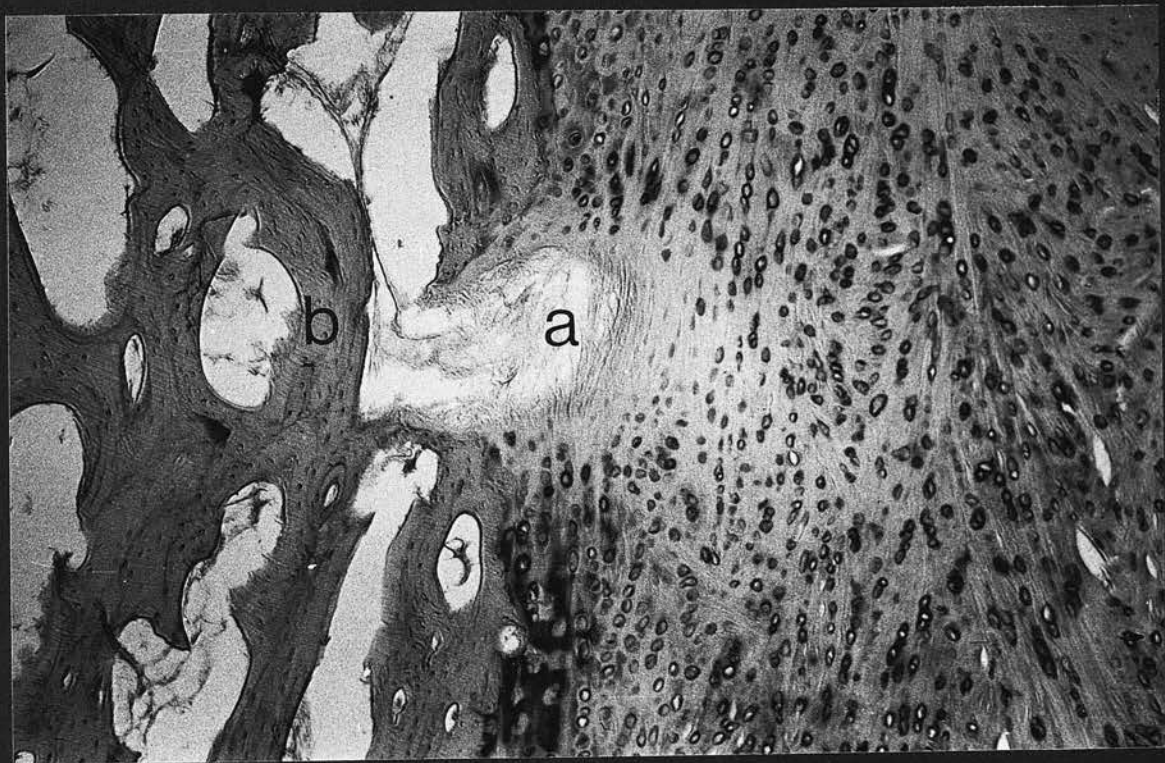
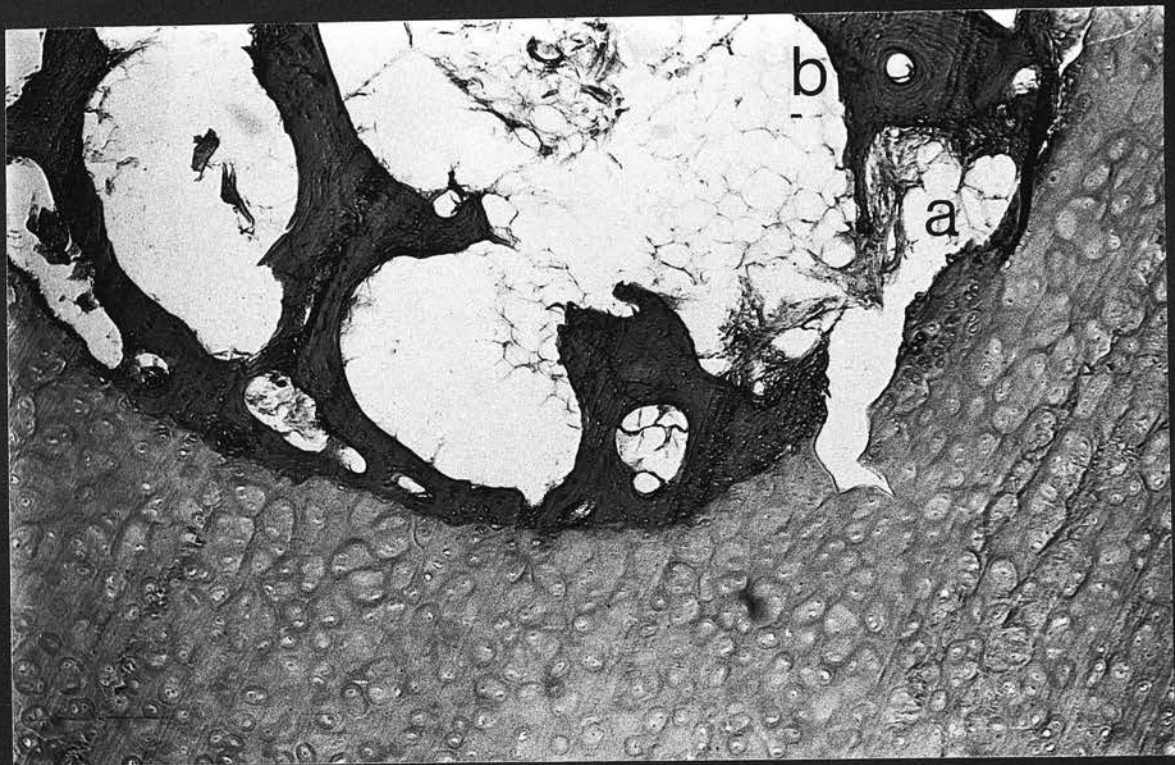


Figure 89 - Vertical section of a bony island in the OFM cartilage of 4 years heavy horse. The cartilage canal (a) is included within the bony island (b). Notice that the origin of this canal is from the perichondrium (c).

(Haematoxylin and Eosin X 70)

Figure 90 - Transverse section in the OFL cartilage of 20 years fell pony showing same features as Fig. 89. (Haematoxylin and Eosin X 70)

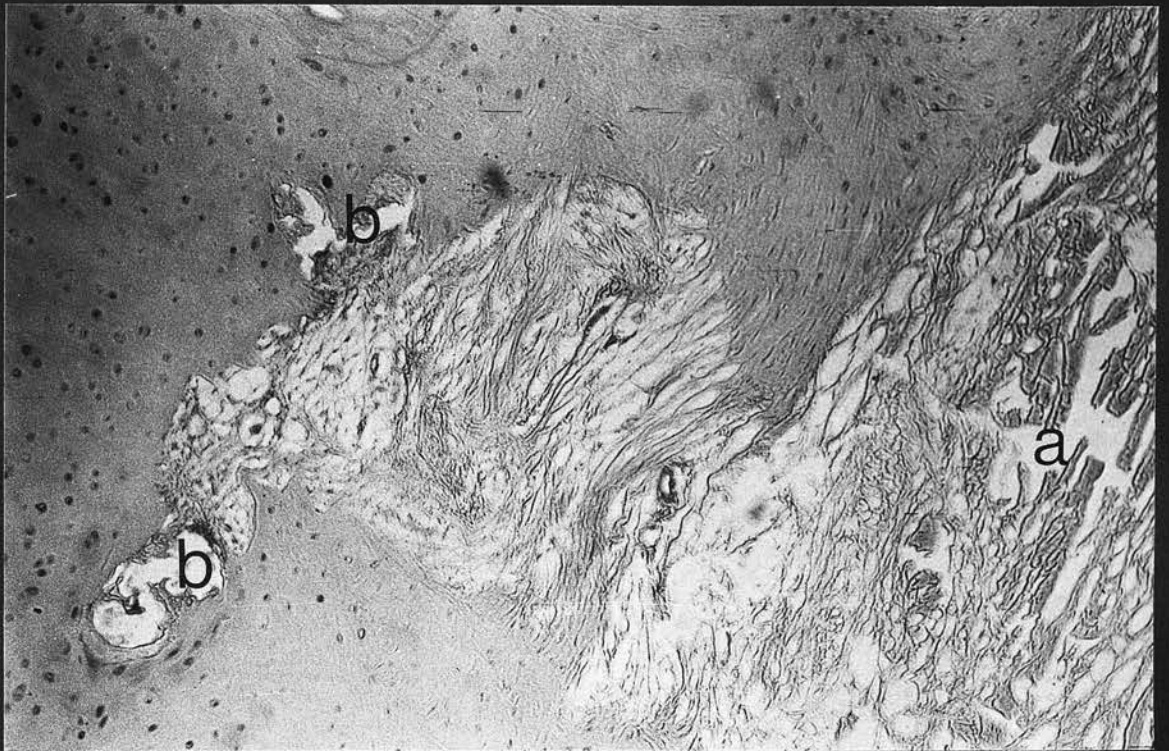
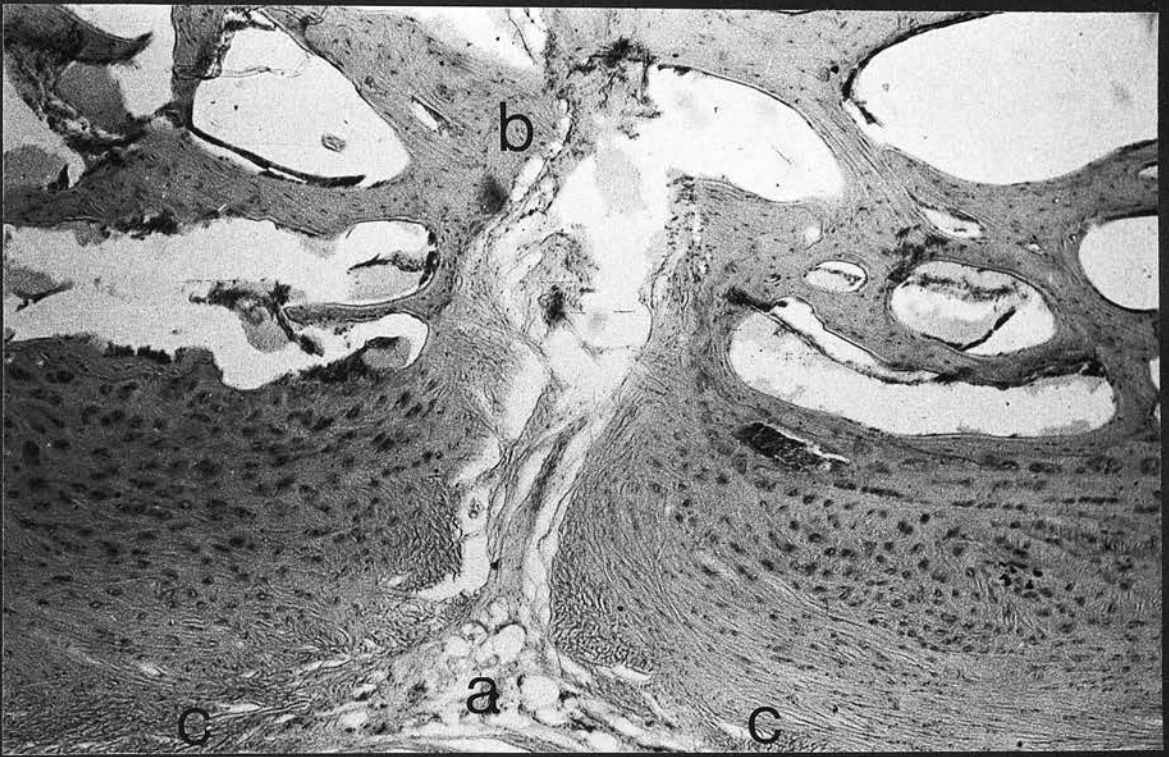


Figure 91 - Transverse section in the NFM distal palmar process (a) and the connected tissue (b), of 5 months Thoroughbred fetus, showing the defined surface of connective tissue (c) on which the growth of the distal palmar process takes place. (Haematoxylin and Eosin X 70)

Figure 92 - Transverse section in the OHL distal plantar process of 6 months Thoroughbred foal. (Haematoxylin and Van-Gieson X 70)

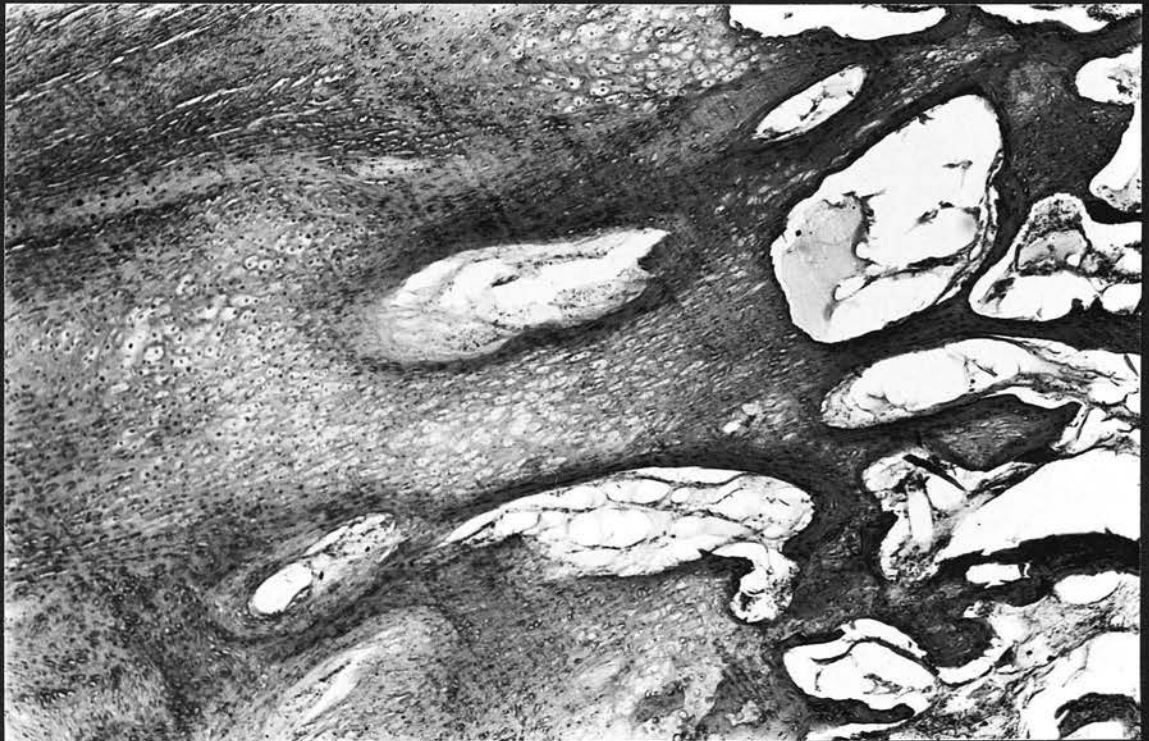
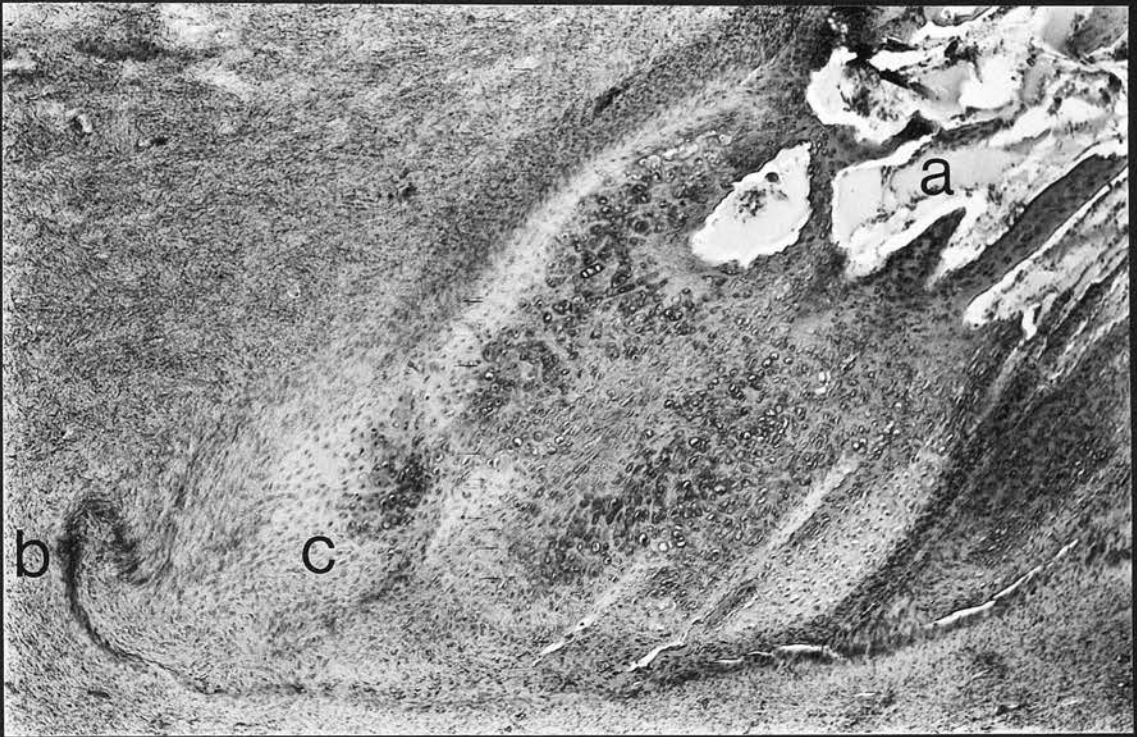


Figure 93 - Vertical section in the OFL distal palmar process of 7 years Highland pony, showing the free cap of the secondarily formed cartilage (a) and the fibroblasts (b) from which it is formed. (Haematoxylin and Eosin X 175)

Figure 94 - Vertical section in the NFL distal palmar process of 16 years hunter showing a reduction in the activity of the osteogenic process. (Haematoxylin and Eosin X 175)

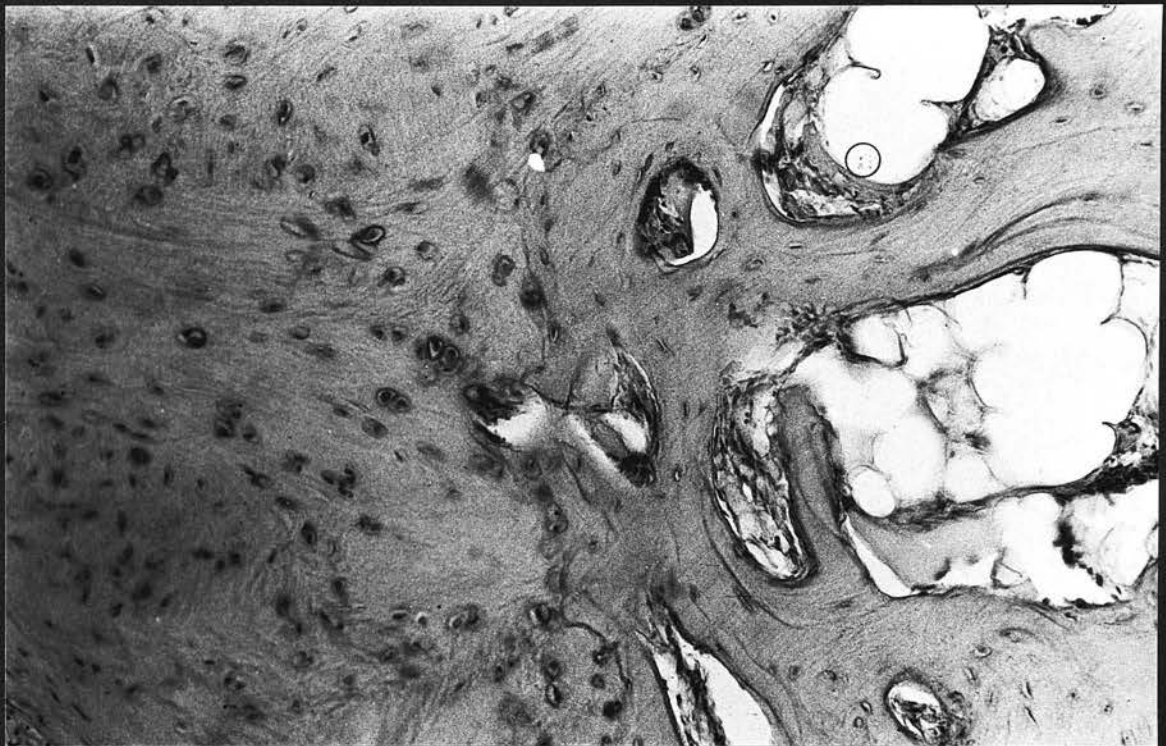
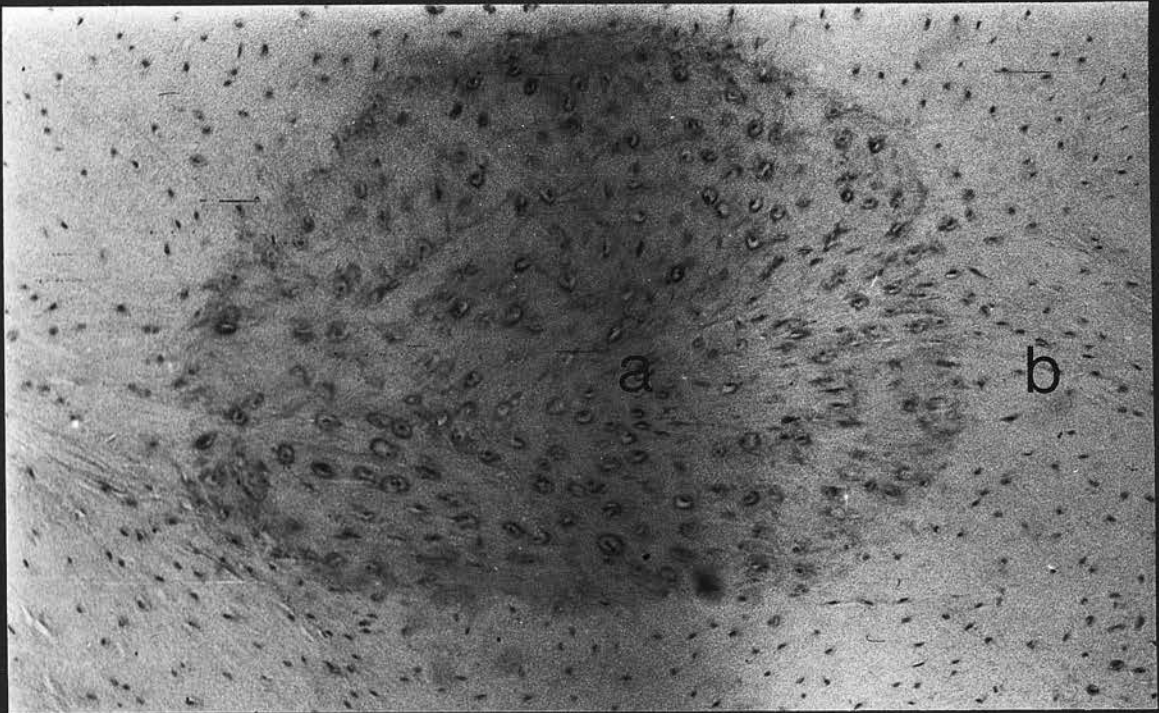
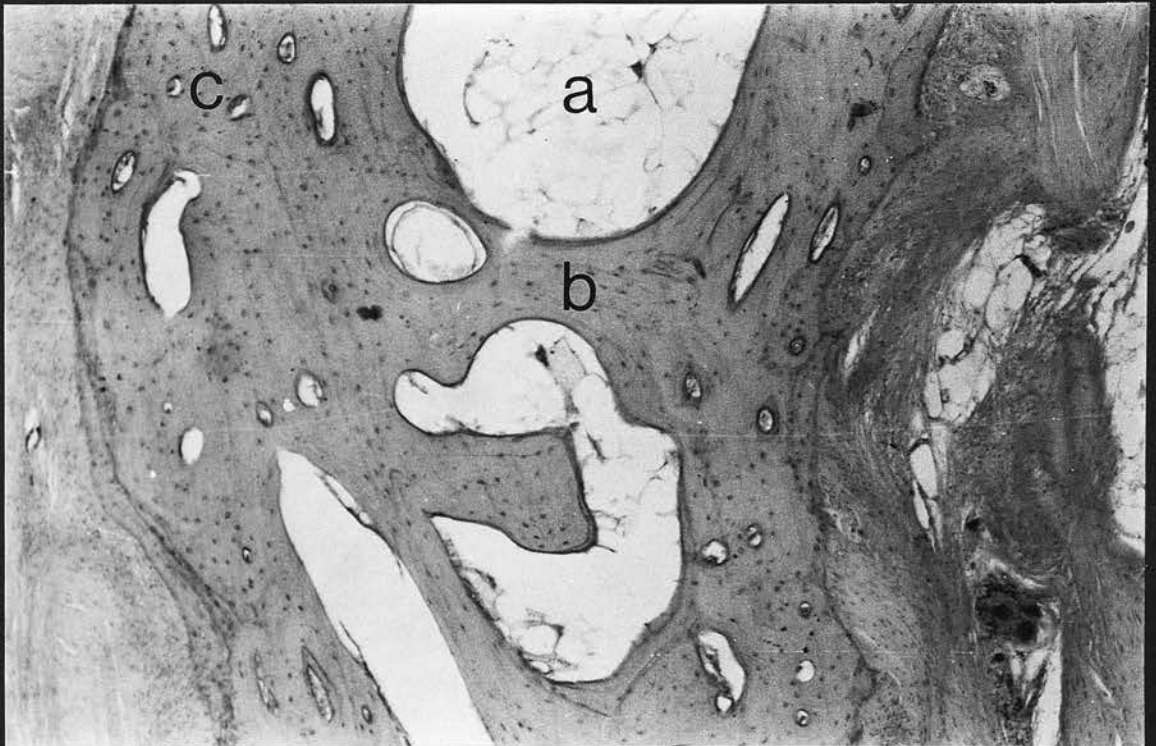
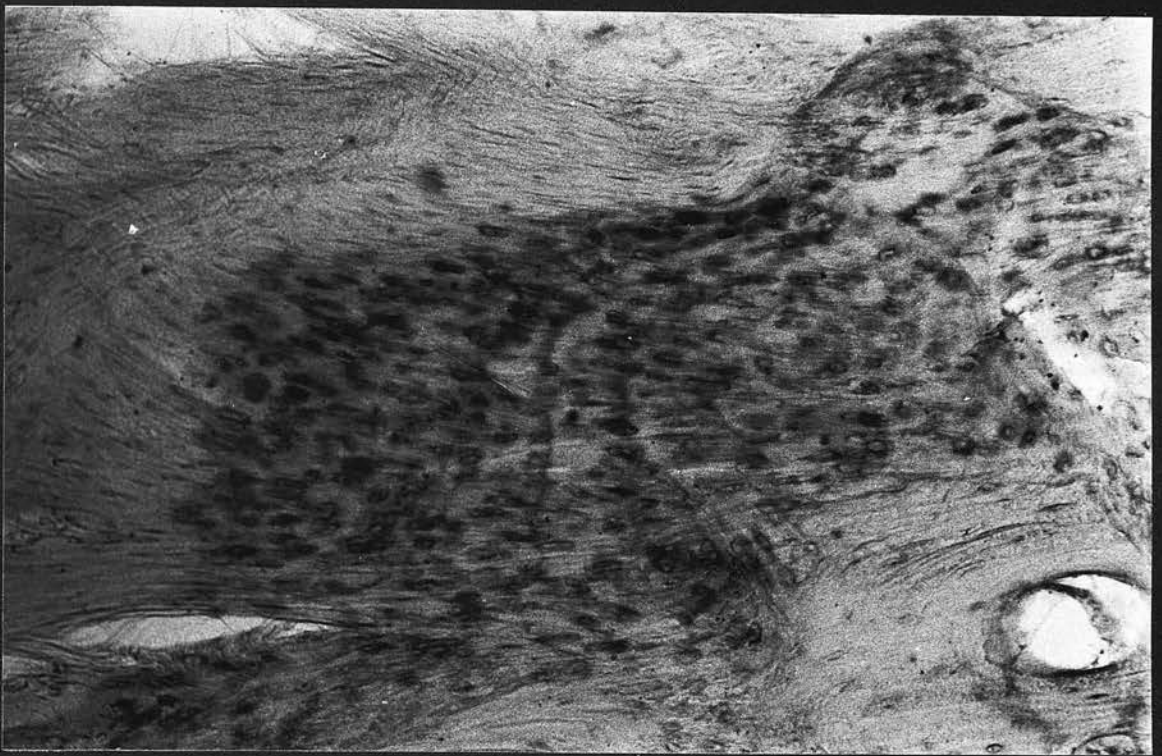


Figure 95 - Transverse section in the OHL distal plantar process of 17 years Shetland pony showing same feature as in Fig. 94. (Haematoxylin and Eosin X 175)

Figure 96 - Vertical section in the OFL distal palmar process of 7 years Highland pony, showing the fatty cells (a) occupying the marrow spaces, the tubular spongiosa (b) and its tendency to develop a compact bone (c). (Haematoxylin and Eosin X 70)



*free cap of the secondarily formed cartilage in the*

Figure 97 - High magnification of the ~~bony~~ bony island shown in Fig. 42.

(Haematoxylin and Eosin X 70)

*Cartilaginous cap*

Figure 98 - Higher magnification of part of the ~~bony island~~ *Cartilaginous cap* shown in

Figs. 42 and 97. Note the free cap of the secondarily formed cartilage (a)

and the fibroblasts (b) from which it is formed. (Haematoxylin and Eosin 175)

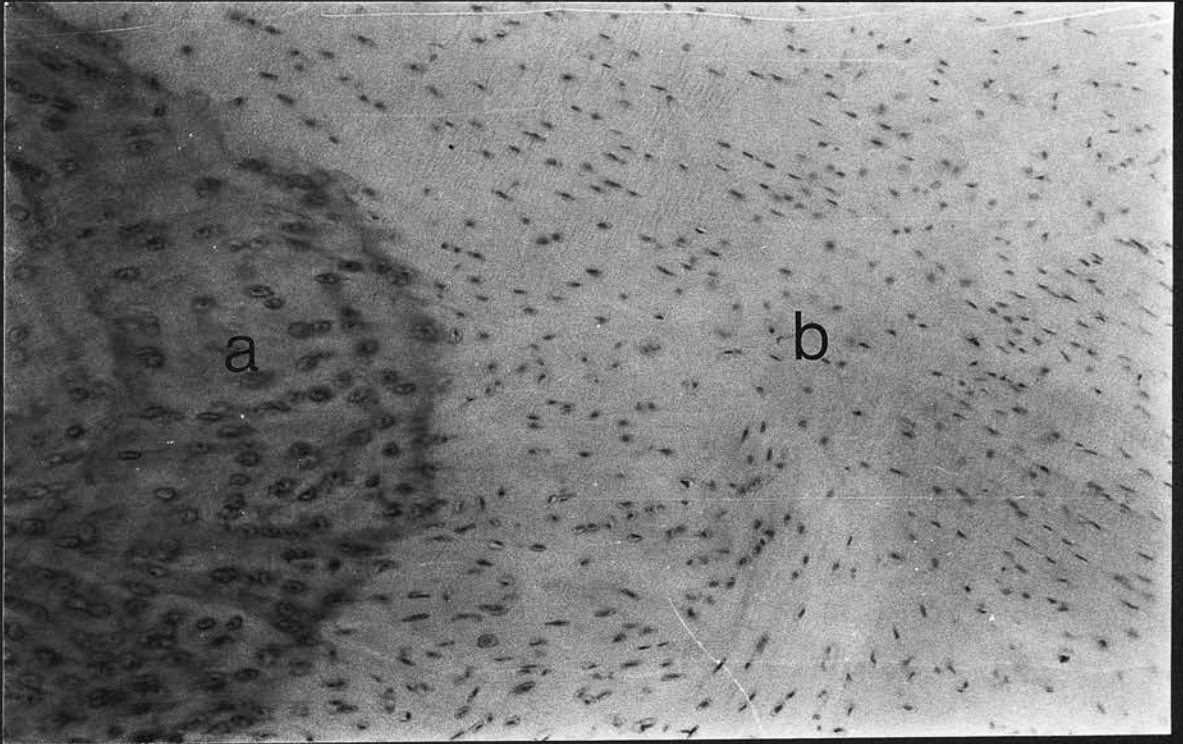
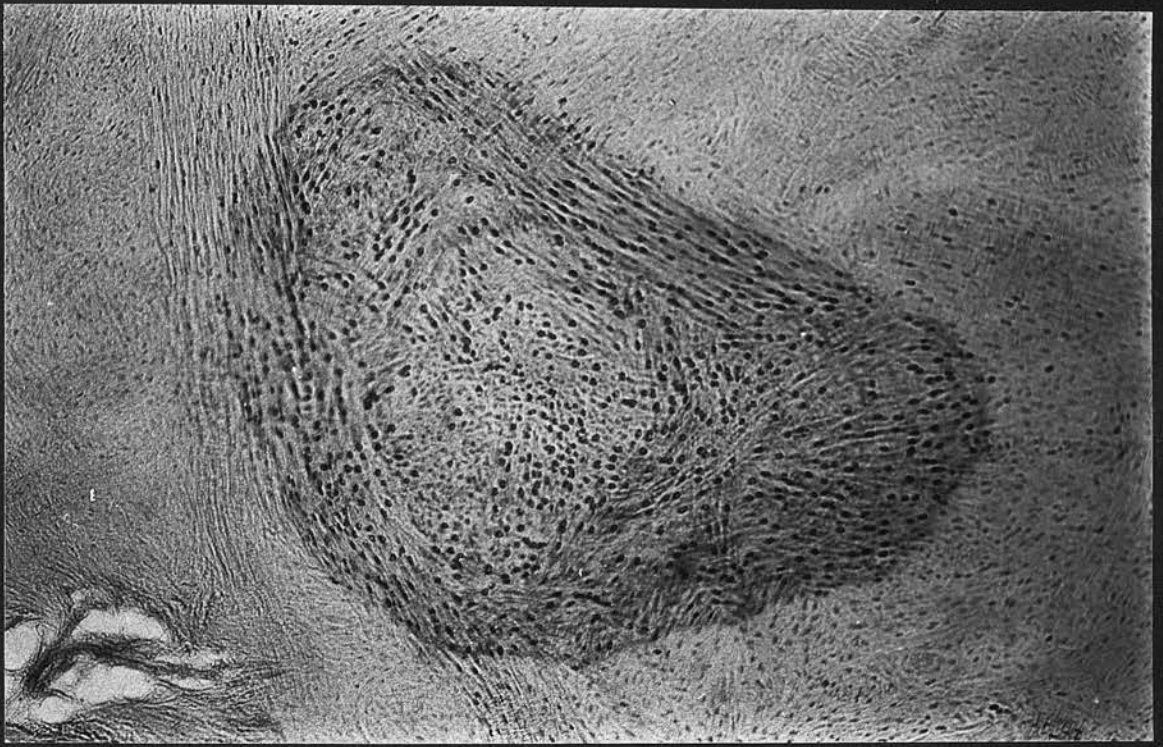


Figure 99 - Transverse section in the OHL distal plantar process of 17 years Shetland pony, showing the distal palmar process at the right side and the bony island at the left which is illustrated in Figs. 41 and 100.

(Haematoxylin and Eosin X 70)

Figure 100 - High magnification of the bony island shown in Fig. 99. (X 175)

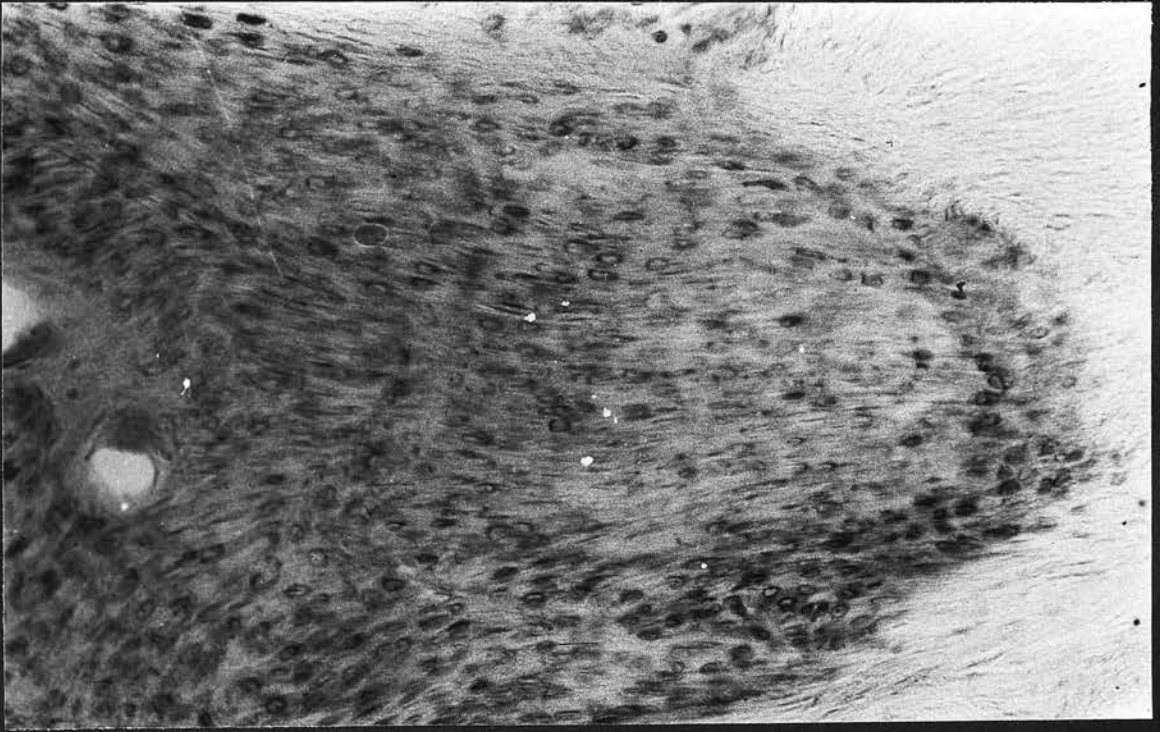
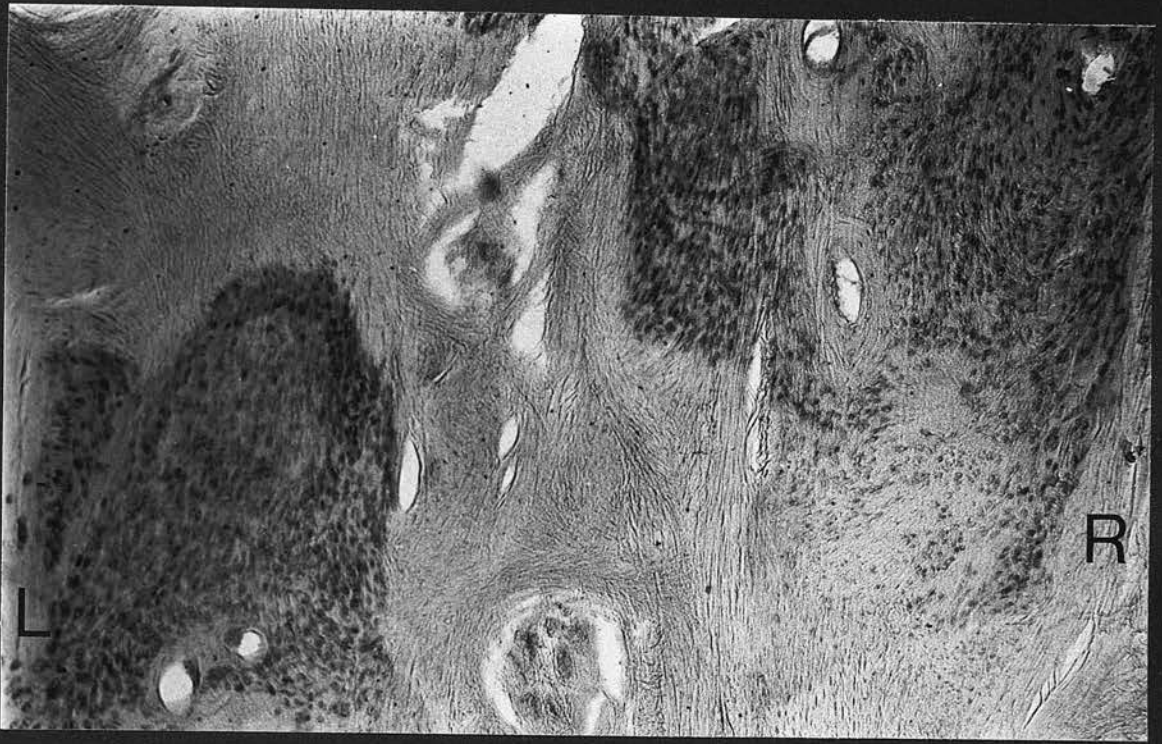


Figure 101 - Vertical section in the bony island of 7 years Highland pony showing the fatty cells (a) occupying the marrow spaces of the old bone (b). (Haematoxylin and Eosin X 70)

Figure 102 - Another vertical section of the same bony island shown in Fig. 101, showing compact bone. (Haematoxylin and Eosin X 175)

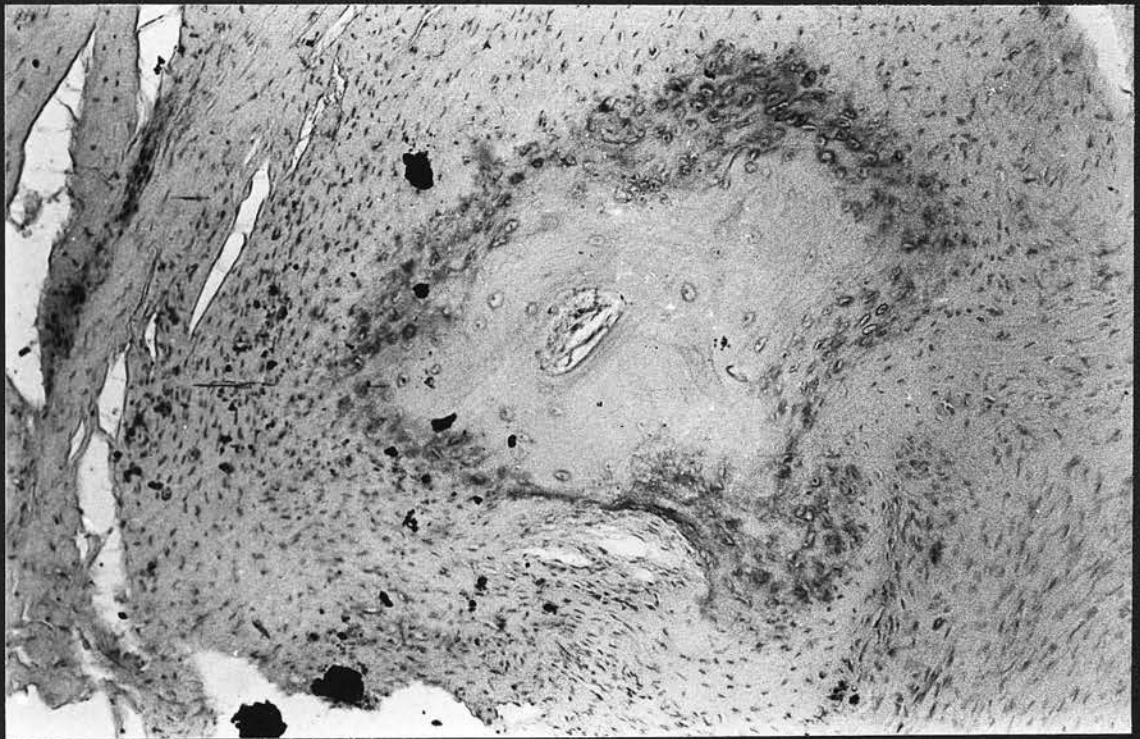


Figure 103 - Vertical section in the NHM cartilage of 16 years Exmoor pony stained with Van Gieson, showing a yellowish green colour of the calcified matrix. (X 132)

Figure 104 - Vertical section in the NFL cartilage of 16 years hunter stained with Masson's trichrome (light green) technique, showing a homogenous appearance of the calcified matrix. (X 132)

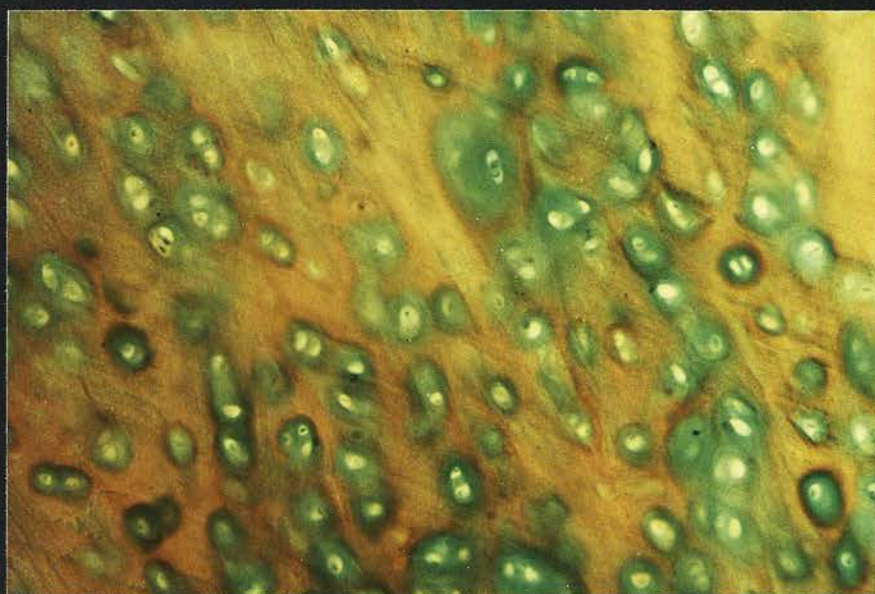
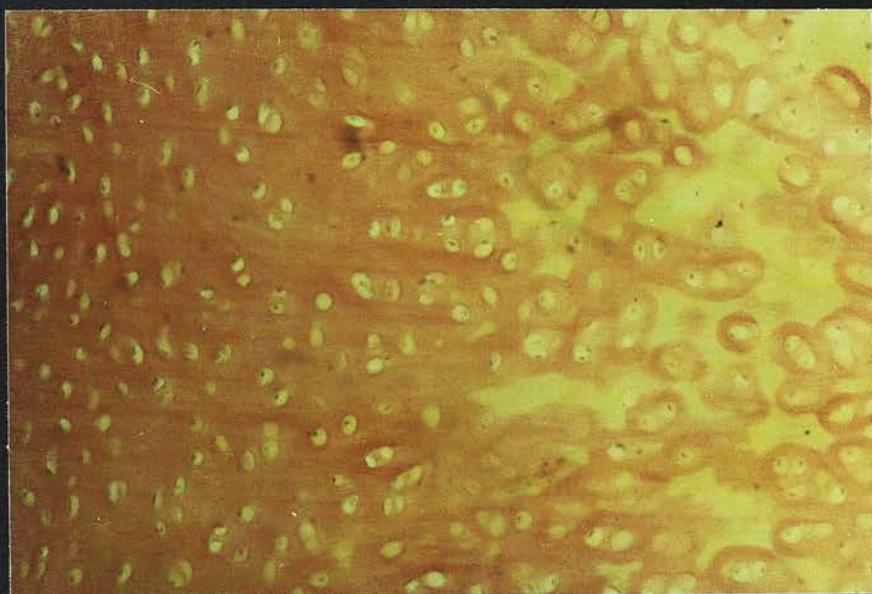


Figure 105 - Vertical section in the OHL cartilage of 10 years Welsh cob pony. Note the shades reaction in the same field. (Haematoxylin and Eosin X 132)

Figure 106 - Vertical section in the OFL cartilage of 17 years heavy horse. Note the colour reaction of the calcium deposition and the loss of tissues in the necrotic focus. (Haematoxylin and Eosin X 132)

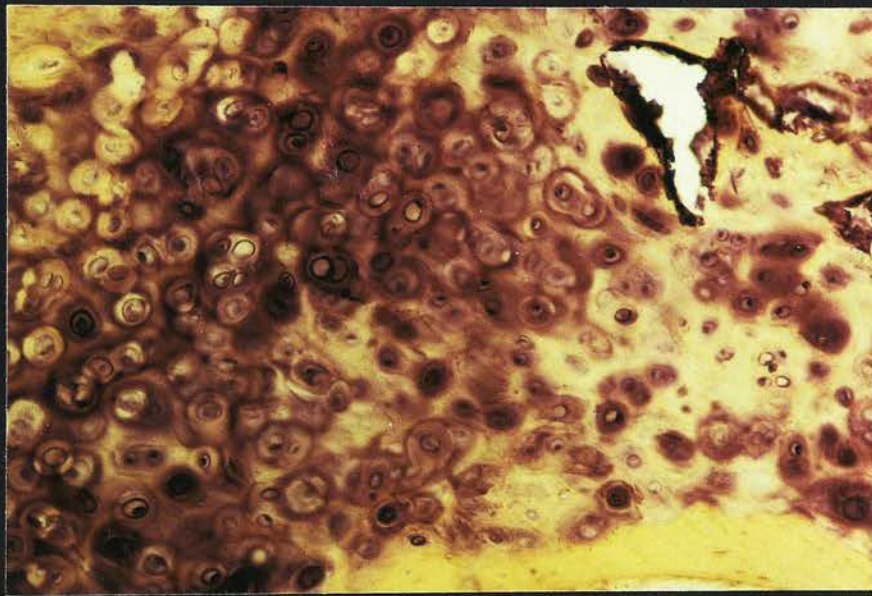
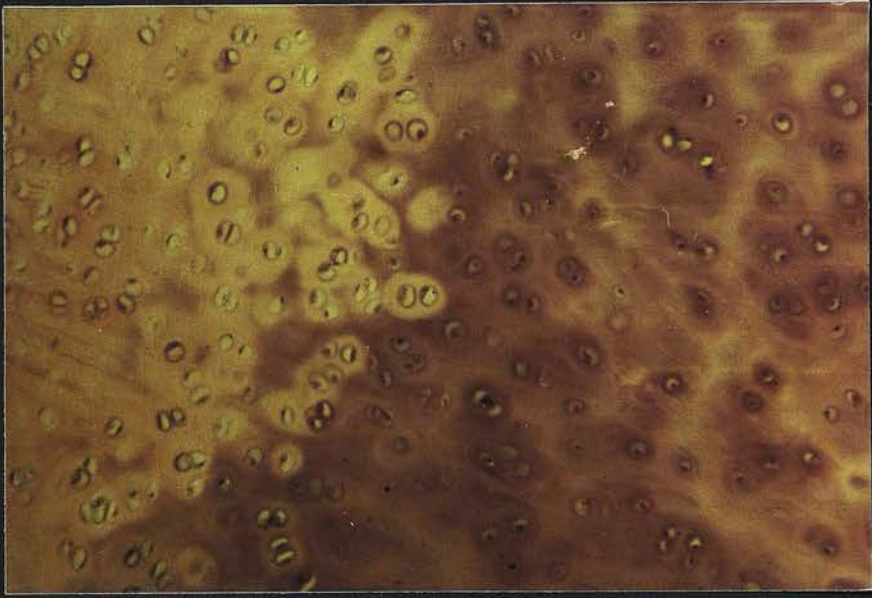


Figure 107 - Vertical section in the NFM cartilage of 4 years heavy horse.  
Note the calcium deposition (a) and the contracted necrotic focus (b).  
(Haematoxylin and Eosin X 132)

Figure 108 - Latero-vertical section in the NFM cartilage of 20 years  
hunter. Note the calcium deposition (a) and the calcified necrotic  
foci (b) with empty spaces indicating the death of group of cells.  
(Haematoxylin and Eosin X 70)

