

SECTION I

Normal Eye

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Figure 1
Cross-sectional diagram of feline eye

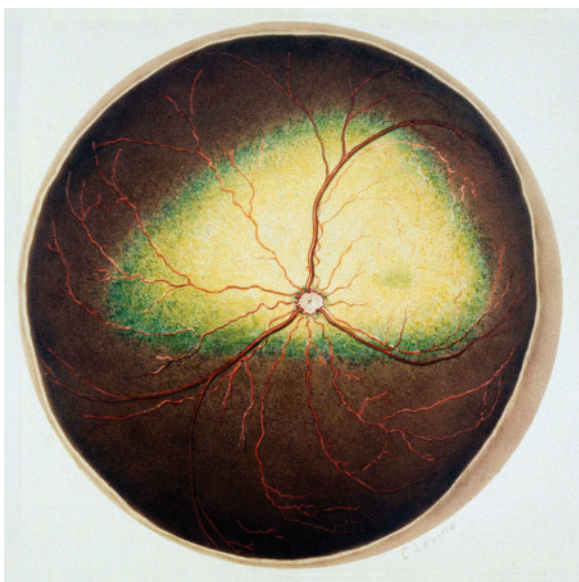


Figure 2
Fundus oculus

The entire fundus oculus of a cat's eye is represented in the artist's drawing. The nasal side is to the left and the temporal side is to the right. The brown nontapetum completely surrounds the green and yellow tapetum. The termination of the sensory retina, the ora ciliaris retinae, is represented by the pale margin surrounding the nontapetum. Peripheral to the ora is the pars plana of the ciliary body. The tapetum in the cat has a more granular appearance than in the dog. The green area in the tapetum, superior and temporal to the optic disc, represents the area centralis. The three primary venules are illustrated, two of which arch temporally. The primary venules and smaller arterioles drop off the edge of the depressed optic nerve, which is located well within the tapetum. The optic disc has a sieve-like appearance due to the structure of the lamina cribrosa.



Figure 3
Heterochromia iridis
(3-year-old domestic shorthair)

In addition to the blue iris, the right eye has a red reflex through the pupil due to the atavistic fundus and lack of pigment in the retina and choroid. A typical green tapetal reflex is present in the left eye. This cat was deaf since birth, a problem linked with blue eyes and a white haircoat in domestic cats.

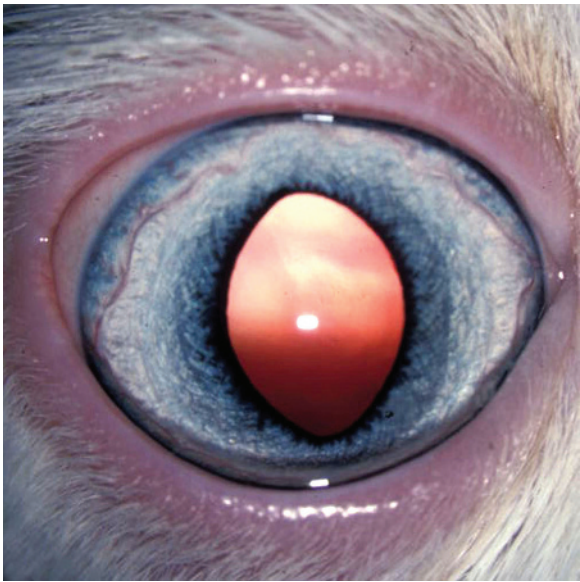


Figure 4
Normal adnexa/Anterior segment, frontal view
(1-year-old Persian)

Pictured here is the blue right eye of a white Persian, showing how little sclera is normally exposed temporally (*left side of photograph*) in the cat. Only the edge of the nictitating membrane is visible on the right. The iris vascular arcade can easily be seen against the light iris. The iris surface has a woven appearance, which is most obvious near the pupil. The pupil margin is slightly roughened because of the posterior pigmented epithelial layers, which terminate at the pupil. The red color seen through the pupil represents the reflection from the subalbinotic atapetal fundus.

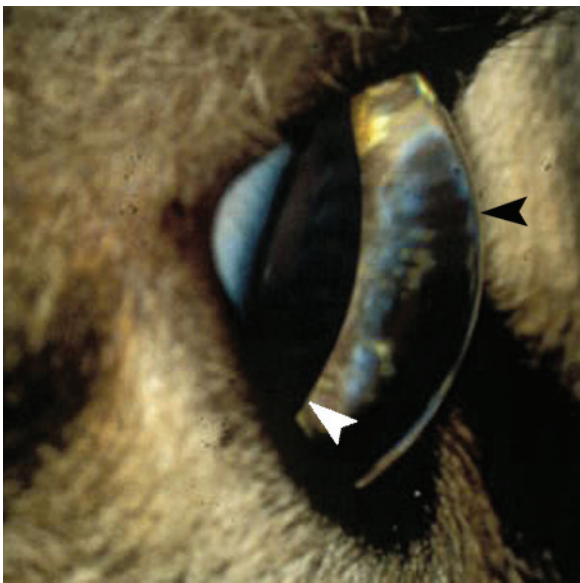


Figure 5
Normal adnexa/Anterior segment, lateral view
(3-year-old domestic shorthair)

Focused on the anterior axial cornea (*black arrow*), this photograph shows the normal corneal curvature. The anterior surface of the lens (*white arrow*) can be seen as it extends into the anterior chamber. The deep anterior chamber of the cat is the area between the arrows. Only the lateral sclera is normally visible.

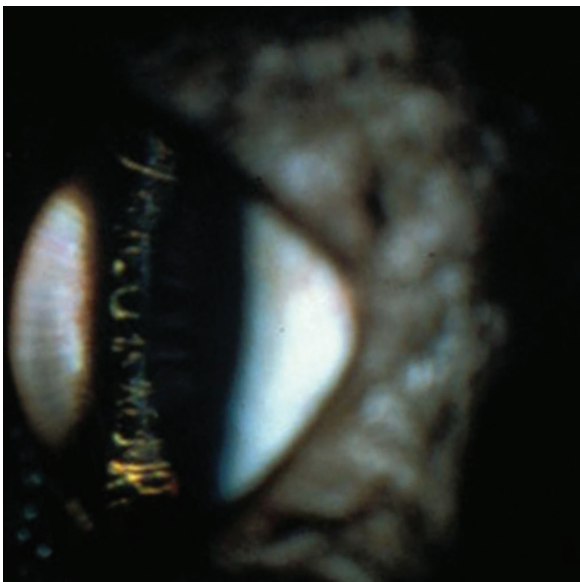


Figure 6
Normal iridocorneal angle, gross view
(2-year-old Persian)

With the camera aimed parallel to the iris face and focused at the level of the iridocorneal angle, the yellow pectinate ligaments have been brought into view. The cat's deep anterior chamber and degree of corneal curvature make it possible to see these ligaments without a gonioscopic lens.

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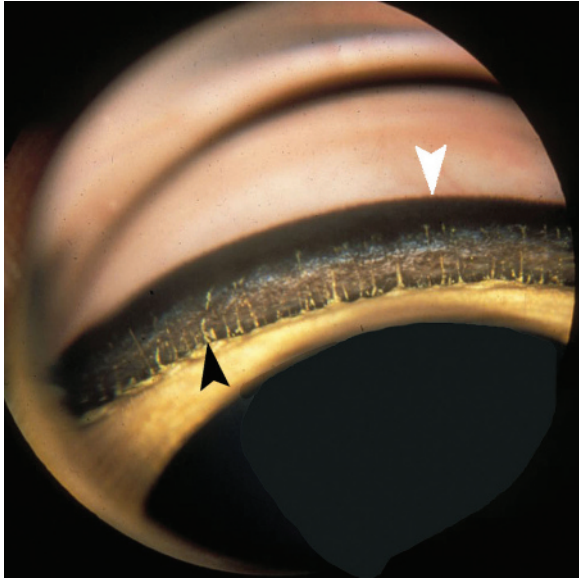


Figure 7
Normal iridocorneal angle, gonioscopic view
(3-year-old domestic shorthair)

Taken through a Koeppe gonioscens, this photograph shows the normal wide drainage angle in the cat. The pectinate ligaments (*black arrow*) can be seen extending from the base of the iris to their insertion into the cornea at the termination of Descemet's membrane. The area deep to the ligaments is the trabecular meshwork. The large dark band (*white arrow*) is the superficial pigmented band representing scleral pigment.

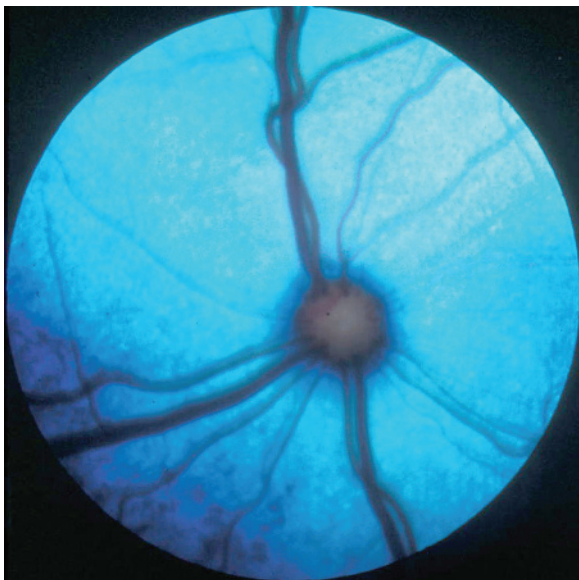


Figure 8
Normal fundus
(8-week-old domestic shorthair)

The immature tapetum is blue in all cats and gradually assumes its adult coloration by 4 months of age. The optic disc appears pinker in the kitten than in the adult cat.

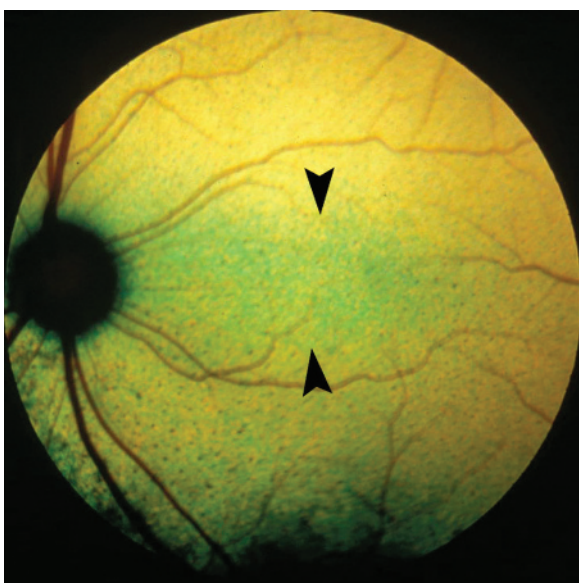


Figure 9
Normal fundus
(2-year-old domestic shorthair)

The area centralis (*arrows*) is seen temporal to the disc in this left eye. The area is cone-rich and comparatively devoid of vessels. The region is often a slightly different color than that of the surrounding tapetum, as the green color here demonstrates. The photograph was taken with a neutral density filter, causing the optic disc to appear darker than normal.

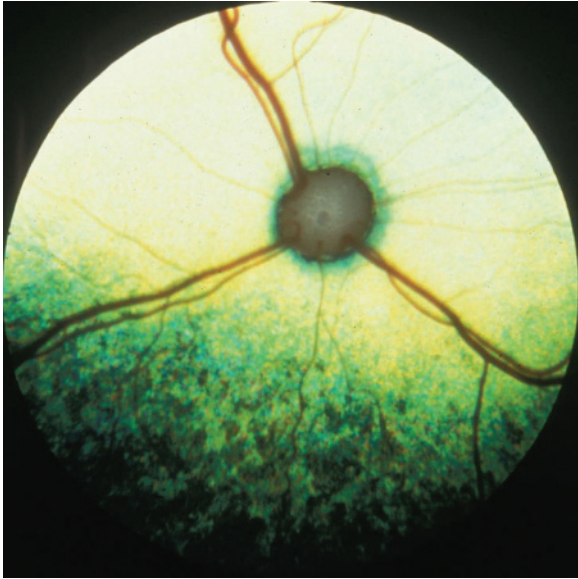


Figure 10
Normal fundus
(3-year-old Persian)

The sieve-like appearance of the optic disc is due to the lamina cribrosa. The incomplete green circle around the disc is referred to as conus and may appear hyperreflective. The normal retinal vessels, both the larger venules and the smaller arterioles, emerge near the rim of the optic disc. The cat has a complete physiologic cup at the disc's center.

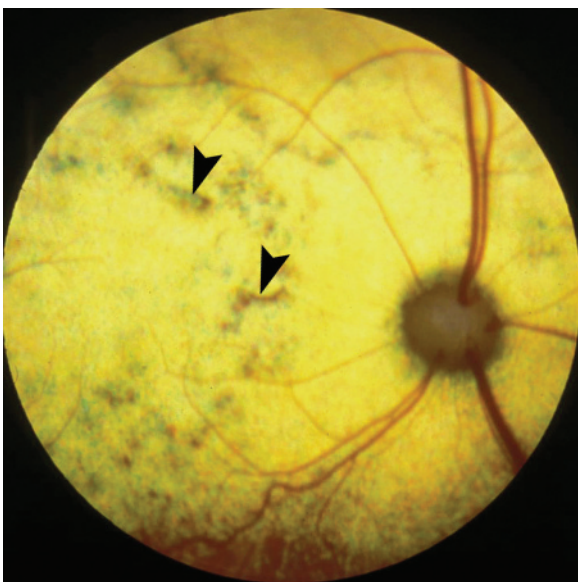


Figure 11
Normal fundus
(4-year-old Himalayan)

When the underlying choroidal pigment is exposed by thinned or hypoplastic tapetum, green and dark spots (*arrows*) are created.

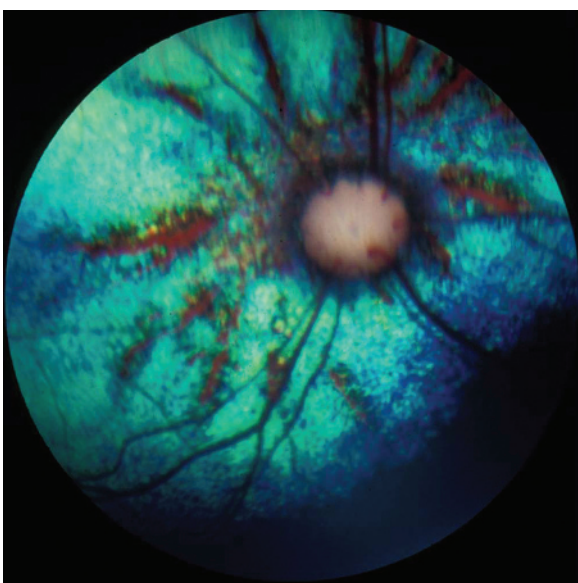


Figure 12
Normal fundus
(4-year-old domestic shorthair)

The dark red streaks seen in the tapetum are a consequence of tapetal hypoplasia. The underlying normal choroidal vessels and pigment are now more easily visualized.

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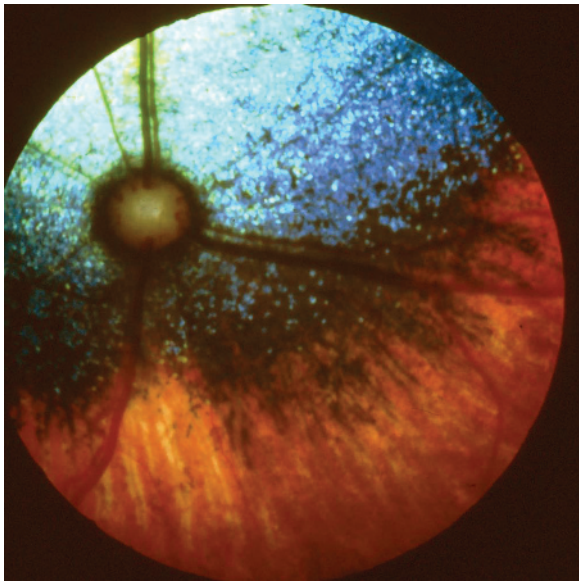


Figure 13
Normal fundus
(adult domestic shorthair)

The blue color of the immature tapetum persists in this adult cat. The inferior nontapetal area lacks pigment, allowing visualization of the normal choroidal vessels.

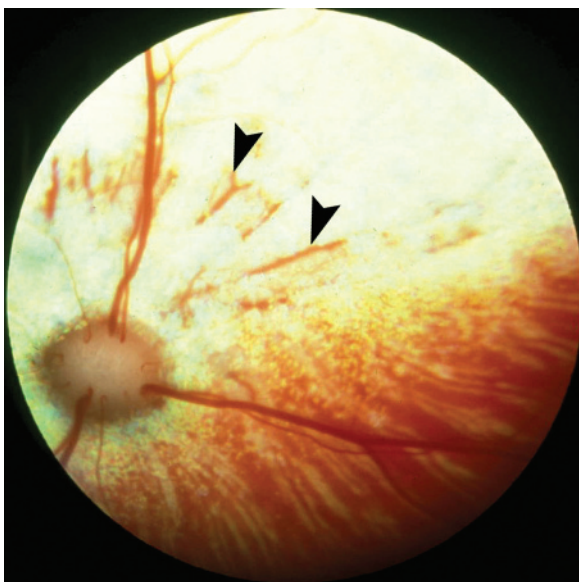


Figure 14
Normal fundus
(4-year-old Siamese)

Focal tapetal hypoplasia exposes choroidal vessels, producing red streaks and dots (*arrows*) within the tapetal fundus. Lack of pigment in the inferior nontapetal area allows the normal choroidal vessels to be seen. Both findings are normal in the Siamese and other color-dilute breeds.

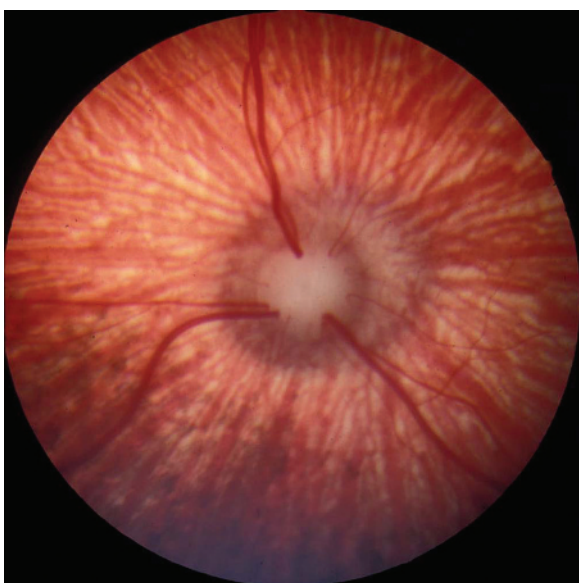


Figure 15
Normal fundus
(4-year-old domestic shorthair)

This white cat has no tapetum. Pigment in the retinal pigmented epithelium (RPE) and choroid is also sparse. With these variations, the choroidal vessels are easily seen. The shaded area surrounding the optic disc may be a subalbinotic variation of conus. Normal retinal vessels span the area but choroidal vessels decrease in density.

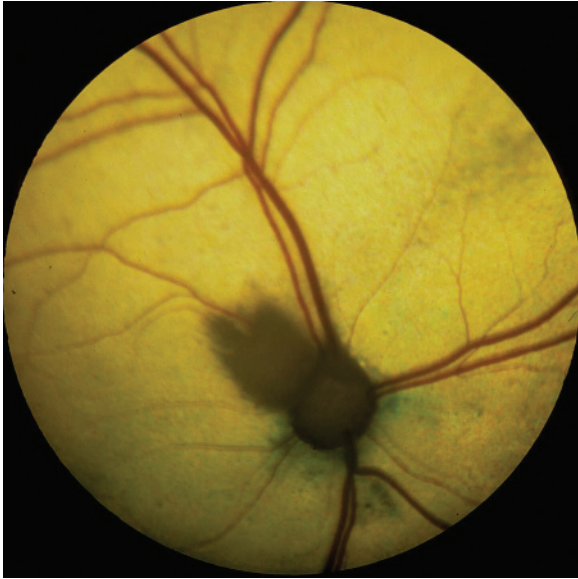


Figure 16
Normal fundus
(12-year-old domestic shorthair)

Excessive myelin radiates from the disc surface into the surrounding nerve fiber layer, creating a feathered or flame-shaped pattern distally. This was a unilateral finding in this patient, but the variation does occur bilaterally.

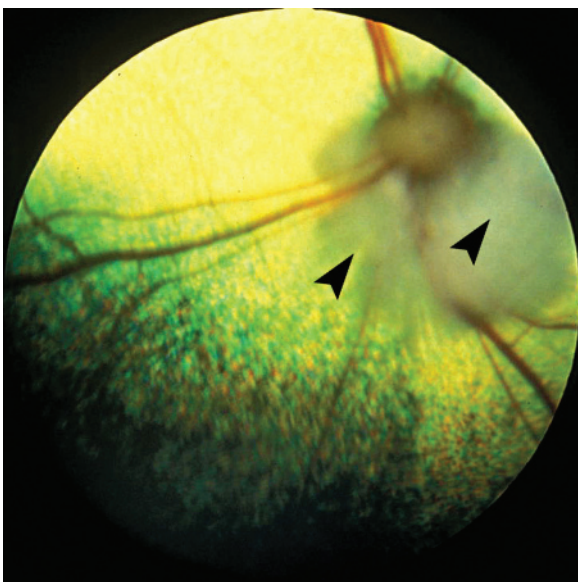


Figure 17
Normal fundus
(11-year-old domestic shorthair)

Excessive myelin anterior to the lamina cribrosa radiates from the disc in the nerve fiber layer (*arrows*). Some retinal vessels are covered by the myelin. The variation was present in both eyes of this cat.

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