

ATLAS OF OCULAR ONCHOCERCIASIS



Japan International Cooperation Agency

Tokyo, JAPAN, 1976

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ATLAS OF OCULAR ONCHOCERCIASIS

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INTRODUCTION

Onchocerciasis, or river blindness, is one of the most important public health problems in West Africa. The authors had an opportunity to make ophthalmological study of the disease in Ghana during the period of May 1973 to May 1974.

Though the informations on onchocerciasis have recently been accumulated, it does not necessarily follow that many colour photos of the eye affection are available. Increasing attention has lately been paid to the disease all over the world. It will be authors' pleasure if this atlas could be helpful for promoting general understanding and interest as to the terrible disease — onchocerciasis.

OCULAR ONCHOCERCIASIS

Onchocerciasis is an infection by *Onchocerca volvulus* transmitted by the bite of certain kind of black fly — *Simulium damnosum* in Africa. After developing dermatitis and subcutaneous nodules (*Onchocercomata*), usually, the eye ball also gets involved. The appearance and development of ocular lesions seem to depend upon the duration and intensity of the infection. It is not yet clear how the microfilariae enter the ocular tissues, however, it seems probable that they penetrate cornea (especially at the limbus) anteriorly and sclera (alongside the vessels and nerves) posteriorly.

In the anterior segment, early manifestations are: superficial fluffy or punctate opacity of the cornea and acute iritis. Later, sclerosing keratitis and recurrent or chronic iridocyclitis develop, which may lead to blindness as the results of leucoma corneae and or secondary glaucoma.

In the posterior segment, the situation is not so simple that there is still a controversy on pathosis and pathogenesis. However, early manifestations may include: localized inflammatory lesions, discrete atrophic areas and sporadic scar formations. Recurrent or long-standing infestation may bring about larger confluent cicatricial lesions or large irregular atrophic foci. Anyhow, at the end stage,

the fundus shows generalized or extensive degeneration associated with secondary optic atrophy.

The authors are not in a position to state definitely if the optic atrophy without or with few other signs can be caused by onchocerciasis. Final four photos may offer some suggestions.

INSTRUMENTATION

The instruments used for the photography of this atlas are:

Nikon F Camera for ordinary photo
Medical Nikkor Auto for close-up photo
Nikon Zoom-photo Slitlamp Microscope for slit photo
Olympus Retinal Camera GRC-II-C for fundus photo

ACKNOWLEDGEMENT

This study was carried out under the Program of Japan–Ghana Medical Research Cooperation. The preparation of this atlas was made possible through Japan International Cooperation Agency (JICA).

We wish to express our thanks to the staff of JICA and also to Prof. Dr. C.O. Quarcoopome and other members of Unit of Ophthalmology, University of Ghana Medical School.



Fig. 1. *Simulium damnosum* (black fly),
vector of the disease.

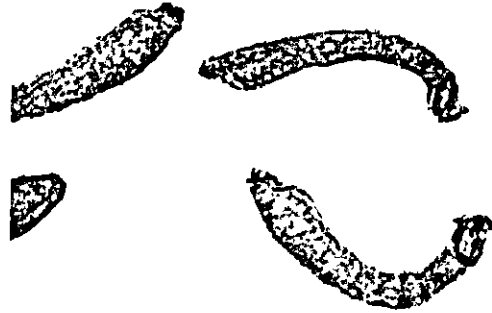


Fig. 2. Larvae of the fly.

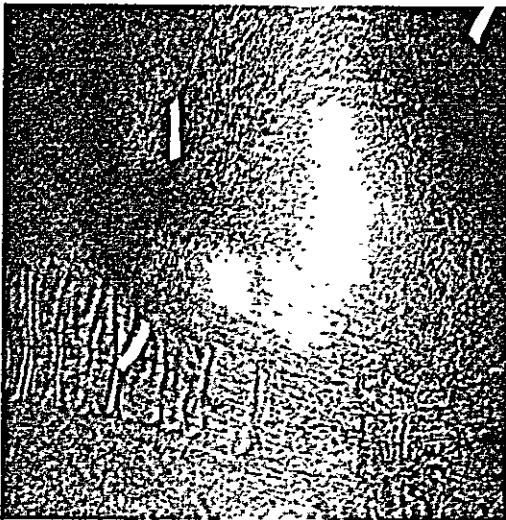


Fig. 3. Big nodule at waist.



Fig. 4. Excision of the nodule.

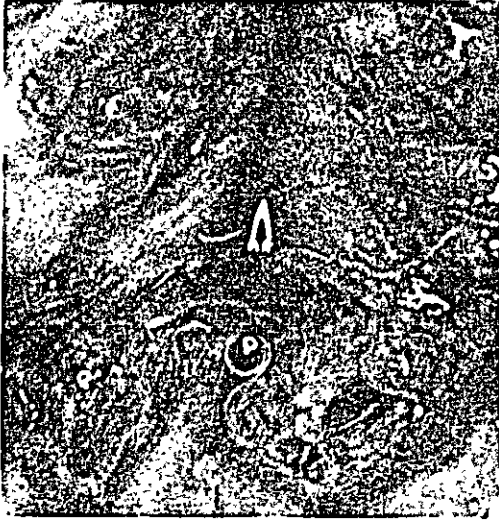


Fig. 5. Section of the nodule including adult worms of *Onchocerca volvulus*.



Fig. 6. Many adult worms coiling in the nodule.



Fig. 7. Palpation of nodule.



Fig. 8. Practice of skin snipping in lower leg.

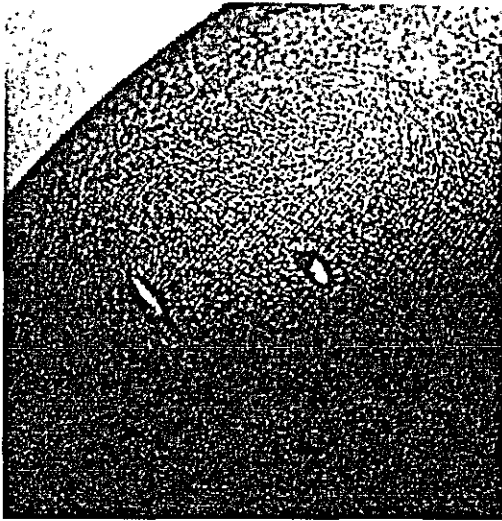


Fig. 9. Snipped regions showing proper (right) and too deep (left, bleeding) snipping.

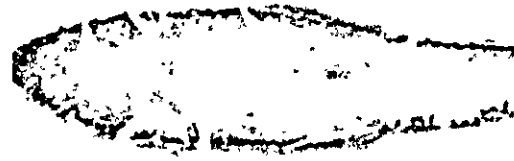


Fig. 10. Snipped skin put in tap water.

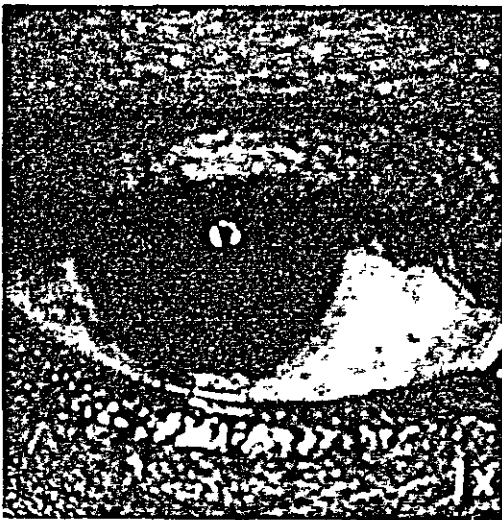


Fig. 11. Superficial diffuse opacity of the cornea. 18 year old female.

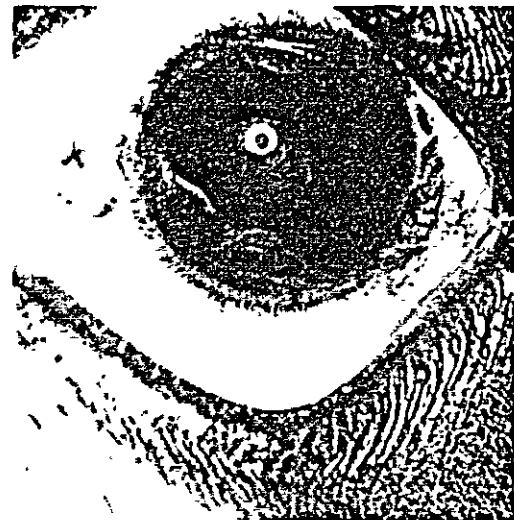


Fig. 12. Sclerosing keratitis, chronic iritis associated with synechiae and complicated cataract, 41 year old male.



Fig. 13. Superficial keratitis and acute iritis,
19 year old male.
Many microfilariae were detected
in anterior chamber.
Vision: 6/24



Fig. 14. Superficial corneal opacity,
35 year old male, right eye

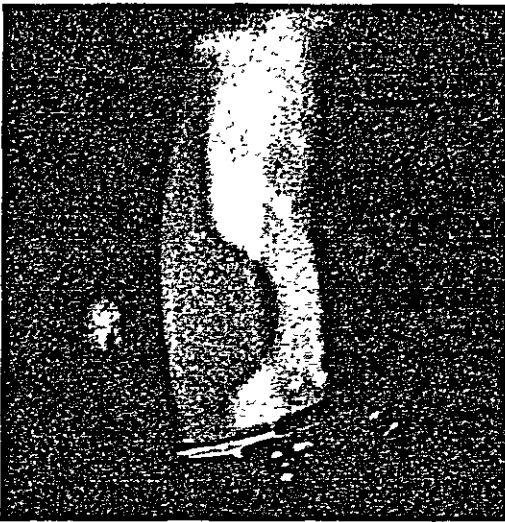


Fig. 15. Similar finding of the same patient,
left eye.

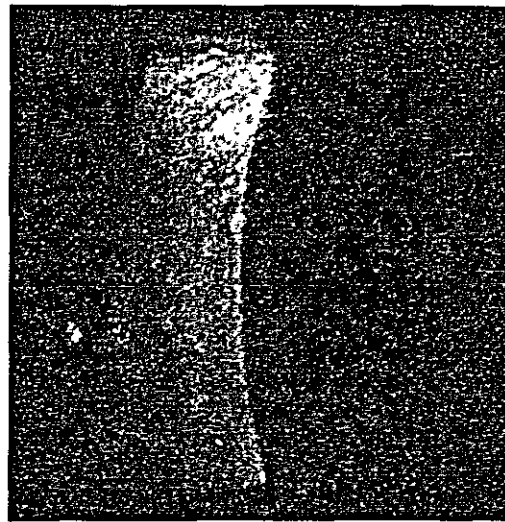


Fig. 16. Punctate keratitis, 16 year old female,
left eye.
Vision. 6/9



Fig. 17. Punctate keratitis in right eye of the same patient.
Vision was P.L. because of large leucoma and of suspected retinopathy.

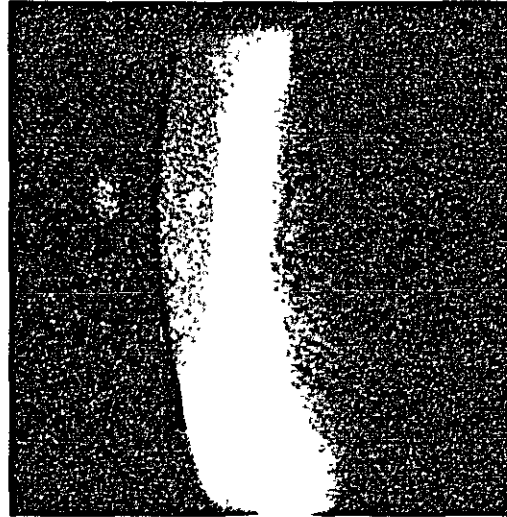


Fig. 18. Corneal opacity and degeneration associated with severe chronic iritis.
Vision: Null

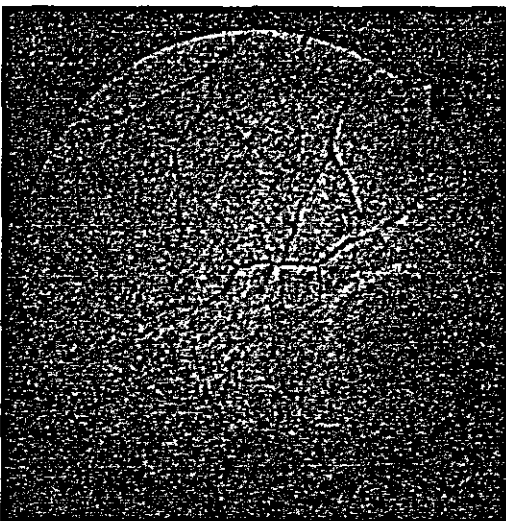


Fig. 19. Early active lesion temporal to the macula, 18 year old female, right eye.

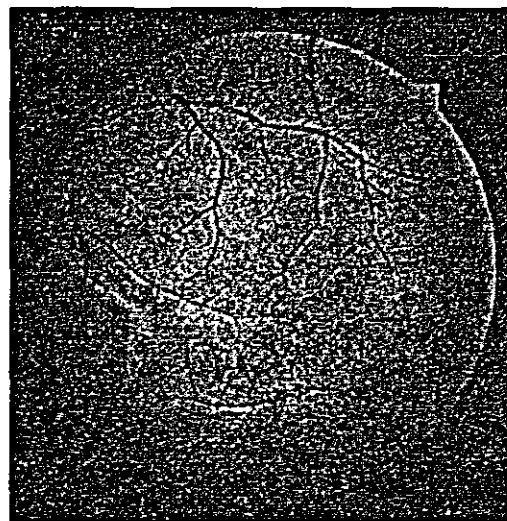


Fig. 20. Similar finding in left eye of the same patient.

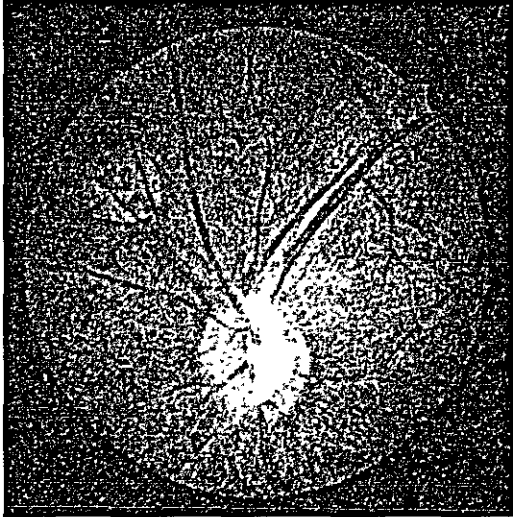


Fig. 21. Small round scarring nasosuperior to the optic disc, 29 year old male.
Vision: 6/12

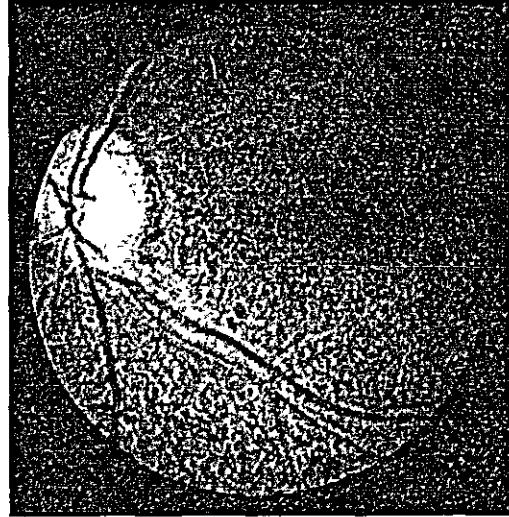


Fig. 22. Moderate lesions in the posterior pole, 19 year old male.
Vision: 6/24

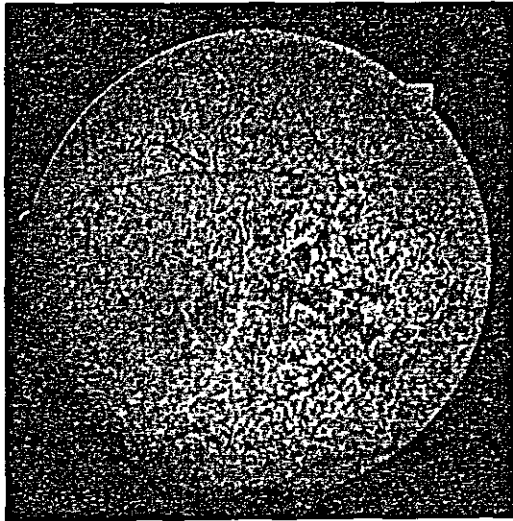


Fig. 23. Same eye as Fig. 22.

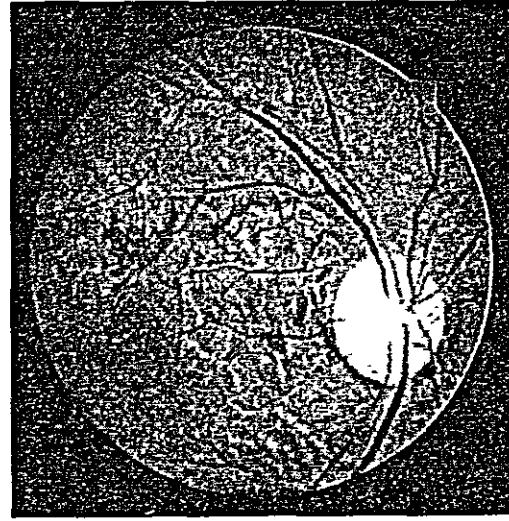


Fig. 24. Gyrate irregular atrophy of the fundus, 32 year old male.
Vision: 6/18

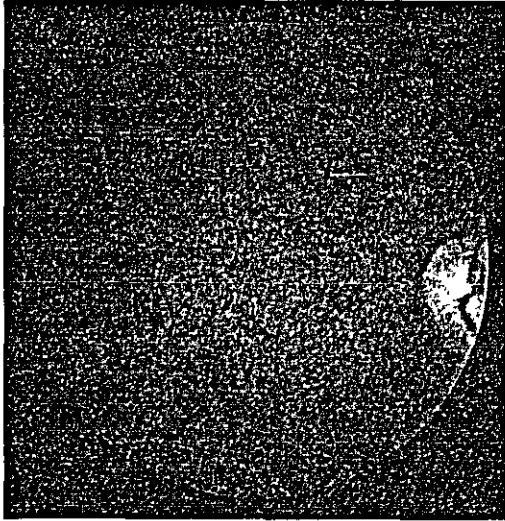


Fig. 25. Early macular lesion,
75 year old female, right eye.

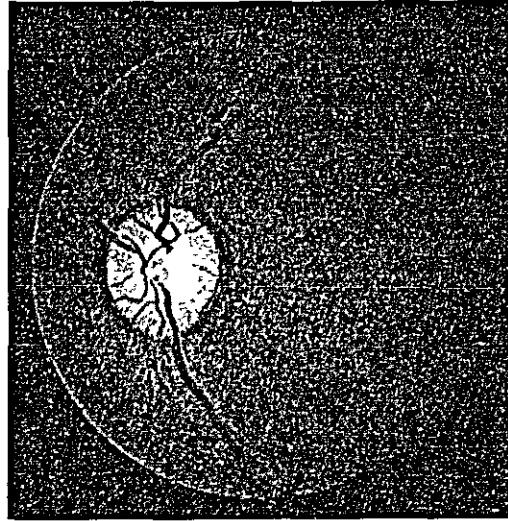


Fig. 26. Similar finding in left eye
of the same patient.

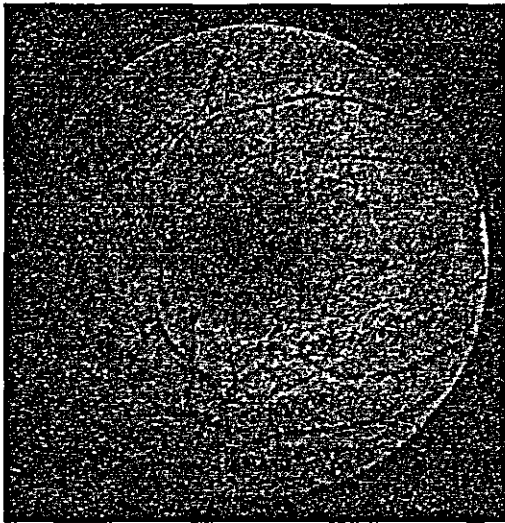


Fig. 27. Early macular lesion,
23 year old male.

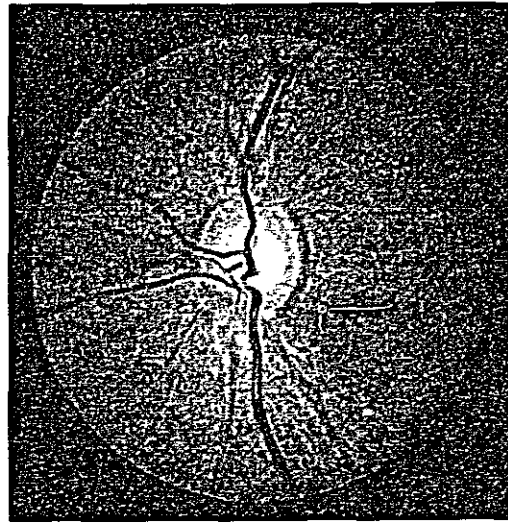


Fig. 28. Early macular lesion,
23 year old male.

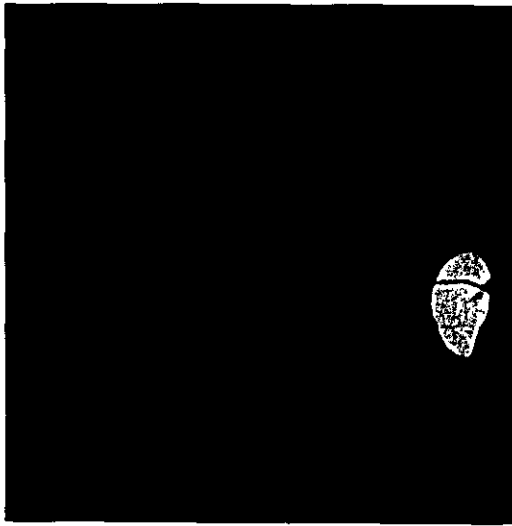


Fig. 29. Pigmented macular lesion,
17 year old male, right eye.
Vision: C.F.



Fig. 30. Macular lesion, left eye of
the same patients.
Vision: 6/30

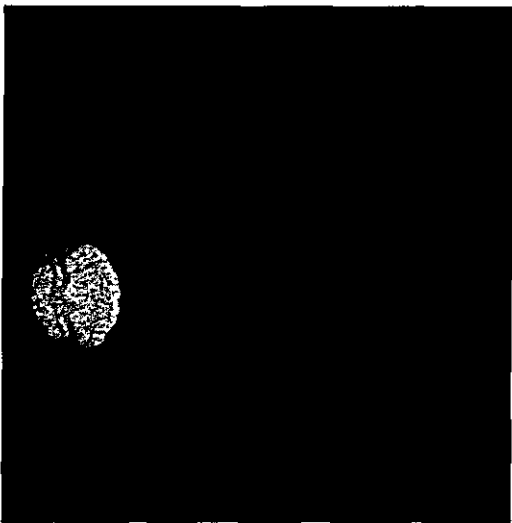


Fig. 31. Old macular lesion and
vitreous opacity,
39 year old male.
Vision: C.F.

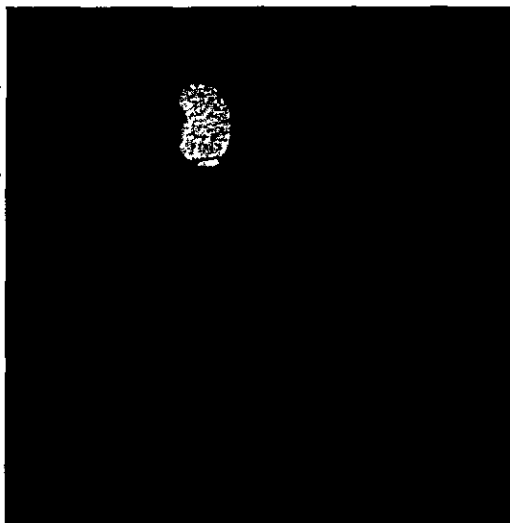


Fig. 32. Diffuse irregular degeneration and
secondary optic atrophy,
35 year old male.
Vision: H.M.

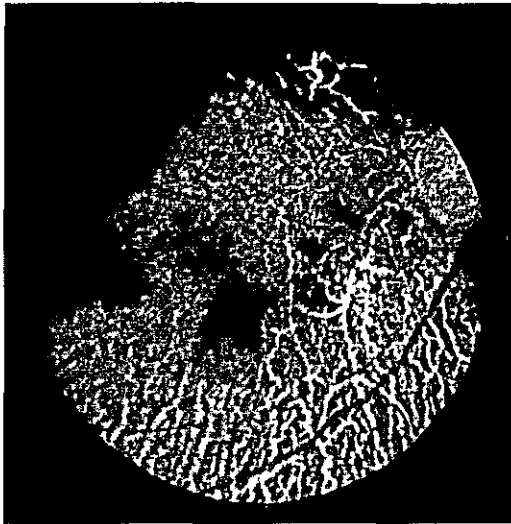


Fig. 33. Extensive degeneration,
39 year old male.
Vision: P.L.

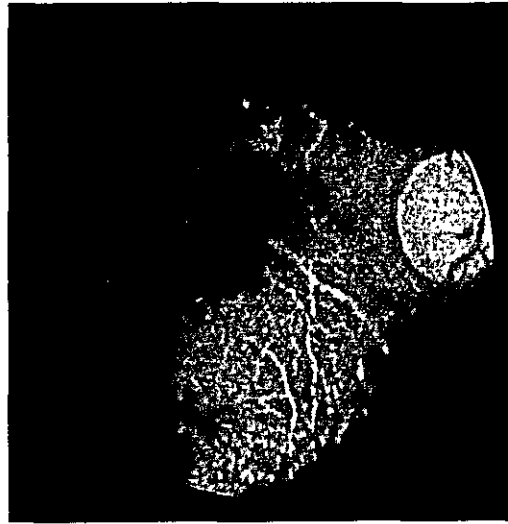


Fig. 34. Extensive degeneration,
43 year old male.
Vision: 6/24

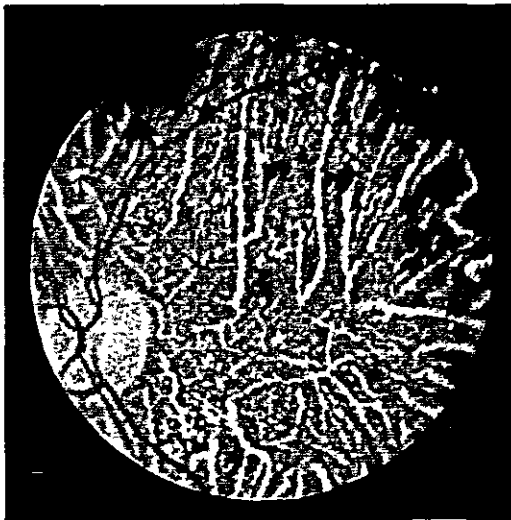


Fig. 35. Extensive degeneration,
54 year old female.
Vision: H.M.

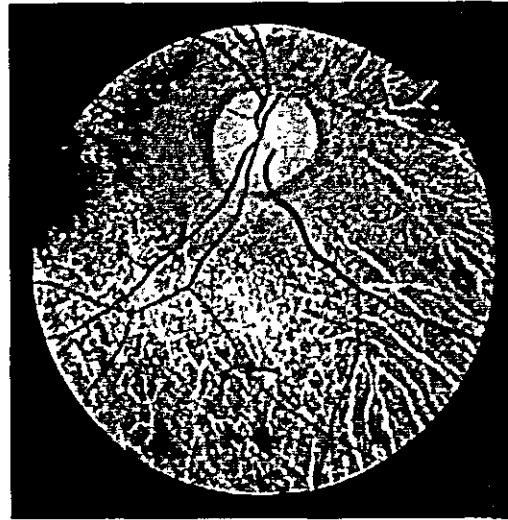


Fig. 36. Extensive degeneration,
50 year old male.

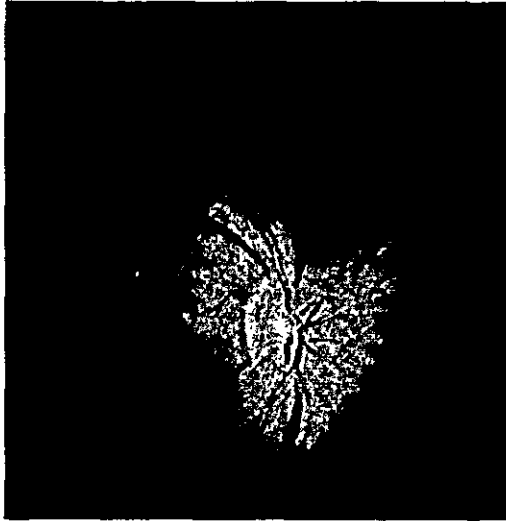


Fig. 37. Optic neuritis, 18 year old male.
Vision: H.M.

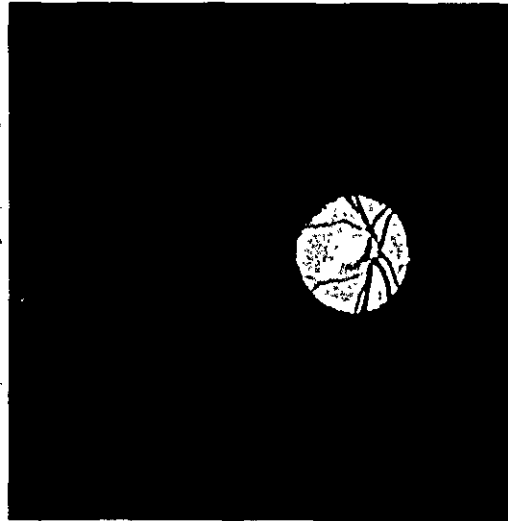


Fig. 38. Palor of the optic disc and
change of arteries,
25 year old male, right eye.
Vision: 6/9/

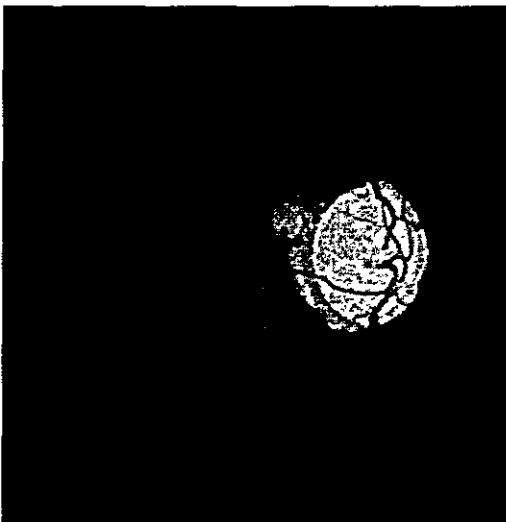


Fig. 39. Optic atrophy, 66 year old male.
Vision: 6/30

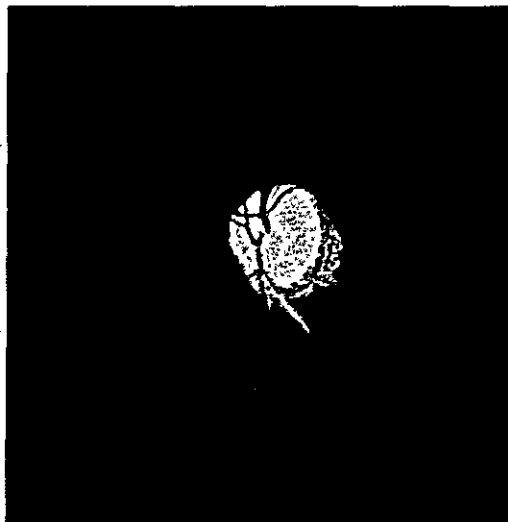


Fig. 40. Optic atrophy, 25 year old male.
Vision: H.M.

