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RAMC 612/1

PLATE IX.

Fig. 1.

Fig. 3.

Fig. 2.

H.Adlard, sc.

PLATE IX.

Figure 1 represents an eye affected with traumatic *coloboma palpebræ et lagophthalmos* on which the operation described at pp. 662 et seq., was performed.

Figure 2 represents the eye after the operation.

Figure 3 represents the same when an artificial eye had been fitted in.

Fig. 1.

Fig. 2.

H. Adlard sc.

PLATE VIII.

Figure 1 represents the state of the eye for which the operation of transplanting a flap of skin according to the Italian or Taliacotian method, described at pp. 634 et seq., was undertaken.

Figure 2 represents the eye as it now appears, five years after the operation. This figure has been engraved from a photograph.

PLATE VII.

This is a reproduction of Figure 1, Table X., of Liebreich's Atlas, representing the ophthalmoscopic appearance (inverted image) in a case of syphilitic retinitis.

Opacity of the retina extends from the papilla, the sharp contours of which have disappeared, in the direction of the larger vessels, around the macula lutea and towards the periphery, where it disappears.

In such cases the light is not reflected from the opaque exudations so strongly, as it is by the shining white patches of fatty degeneration of the retina in Bright's disease, fig. 18, p. 56.

In the upper part of the figure is seen the filmy diffused opacity pathognomonic of retinitis.

The veins proceeding upwards (inverted image), are much dilated and tortuous, whilst those proceeding downwards are very slender and partially obliterated.

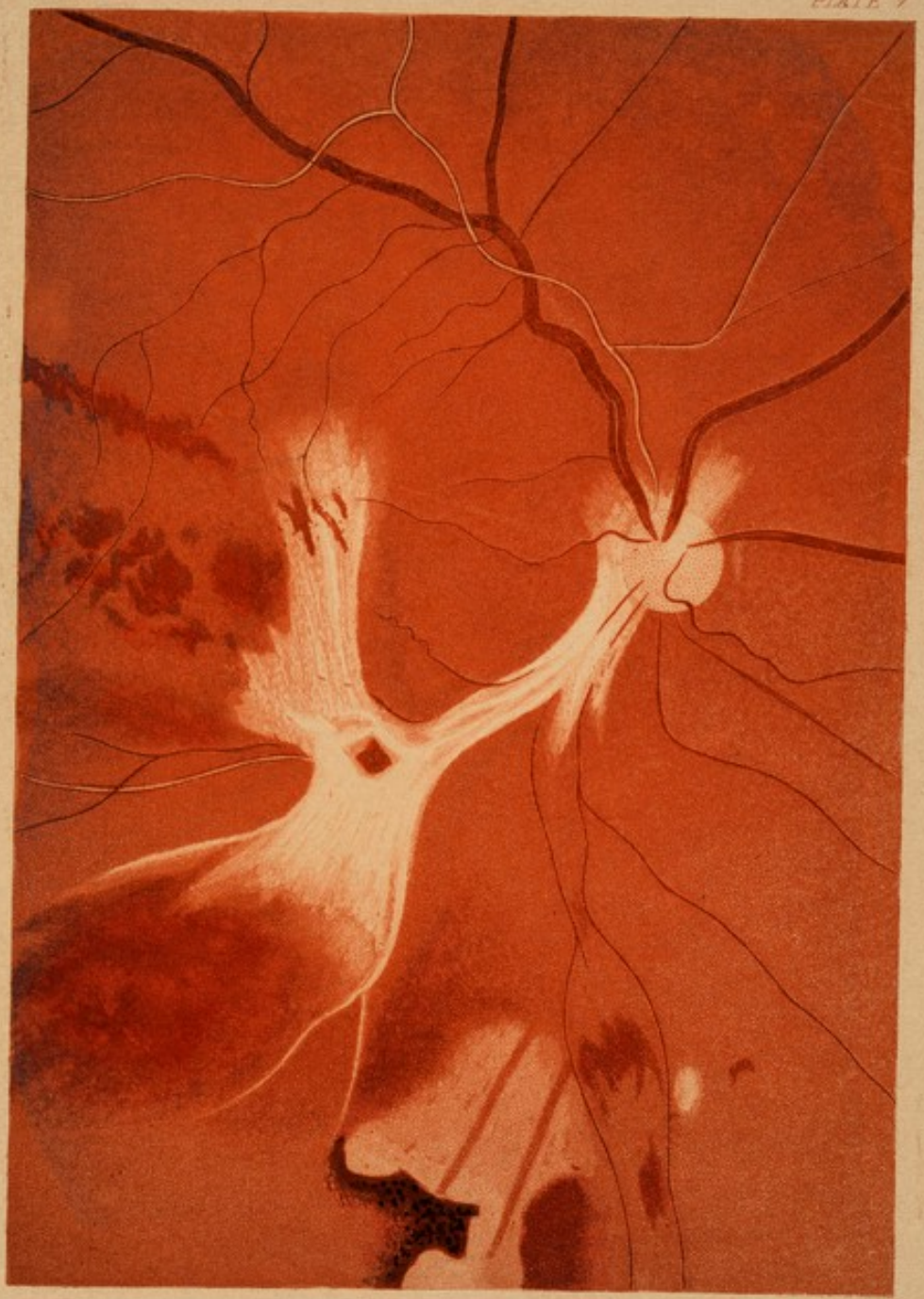
On the inner surface of the retina there are, in the lower part of the figure, radiating opaque-white deposits of lymph, which bury and compress a fasciculus of vessels so much that some of their ramifications when they reappear are reduced to fine white lines.

There are numerous patches of ecchymosis, both recent and old, some behind, some on the inner surface, and some in the substance, of the retina.

The large clear irregular-shaped patch with pigment-deposit on one side at the lower part of the figure, is a manifestation of accompanying choroidal inflammatory degeneration.

In ordinary cases of syphilitic retinitis, the state of the veins is not so much altered; nor are there such copious exudation of lymph, so much extravasation of blood, and such extensive degeneration of the choroid, as are seen in the lower part of the figure. See p. 127.

PLATE 7



H. Adlard, sc.

PLATE VI.

This (which is a reproduction of Figure 1, Table IV., of Liebreich's Atlas der Ophthalmoscopie) represents the ophthalmoscopic appearance (inverted image) in a case of *exudative choroiditis* (p. 235). There is seen copious exudation both on the inner surface and in the substance of the choroid.

The large whitish spot represents exuded matter on the inner surface of the choroid.

The small clear round spots in the neighbourhood of the optic nerve are nodules of exudation in the interstices of the choroid.

After the absorption of such nodules the choroidal tissue is left atrophic and destitute of pigment.

A peculiarity in the pathological anatomy of the choroid, here seen, is, that at the places where the membrane has become atrophic the *margin* is almost always the seat of increased pigment deposit. See p. 126.

PLATE 8

H. Adlard, sc.

Fig 1.

Fig. 2.

Fig. 3.

H. Adlard. sc.

PLATE V.

Figure 1.—The second case of hydatid in the anterior chamber, referred to at p. 315. The body and head of the animal are protruded from the tail vesicle.

Figure 2.—Represents a case of dislocation of the lens into the anterior chamber, the lens being still clear ; see p. 750. This figure also illustrates the mode of fully exposing the front of the eyeball for examination, as above described at p. 16.

Figure 3.—Represents the third case of cyst, in connexion with the iris, above described at p. 319.

PLATE IV.

Figure 1.—This represents a case of medullary fungus of the eyeball in its second stage, as described at pp. 323 et seq.

Figure 2.—A case of sclerotico-choroid staphyloma from traumatic inflammation of the eye. In this figure there is a good representation of tortuous and varicose vessels. See pp. 237, 280, et seq.

Figure 3.—A case of melanosis of the eyeball, in which the iris has been detached at one part of its circumference, and the black mass is making its appearance from behind, as also through the sclerotica near the cornea. See p. 332.

PLATE IV.

Fig. 1.

Fig. 2.

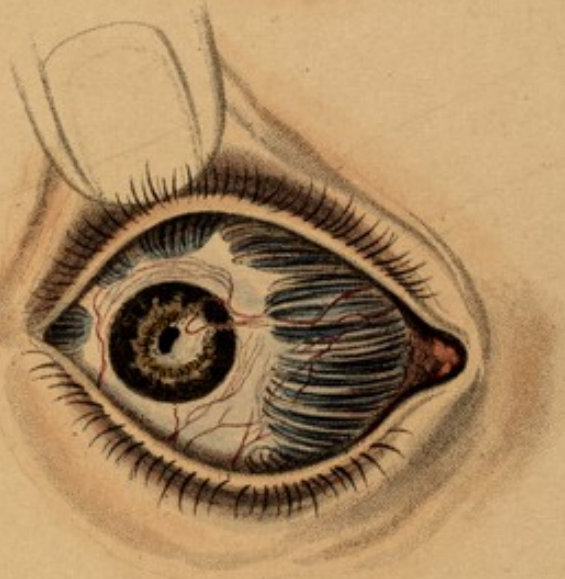


Fig. 3.

H. Adlard. sc.

Fig 1.

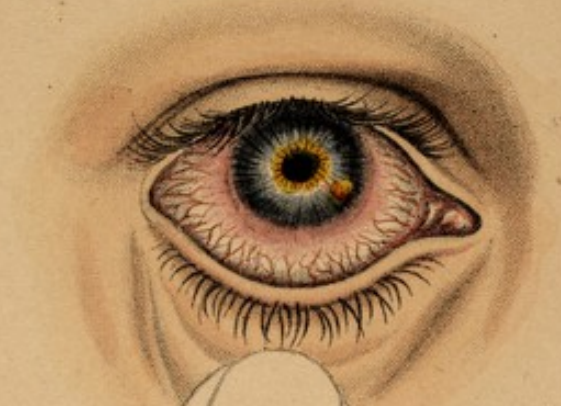


Fig 2.

Fig 3.

H. Adlard, sc.

PLATE III.

Figure 1.—This figure represents a case of iritis, as above described at pp. 121 et seq. ; and also illustrates the mode of depressing the lower eyelid for examination of the front of the eyeball. See p. 16.

Figure 2.—Inflammation of the ciliary body and corresponding part of the sclerotica (*sclerotico-kyklitis*), with secondary iritis. Near the outer margin of the cornea, the sclerotica is thickened and yellowish looking ; elsewhere it is purplish. There are two spots of opacity of the cornea at its outer edge. See p. 229.

Figure 3.—Arthritic posterior internal ophthalmia, as described at pp. 241 et seq. The figure also illustrates the mode of raising the upper eyelid for examination of the front of the eyeball. See p. 16.

PLATE II.

Figure 1.—This represents a case of granular conjunctiva with pannus. The lower eyelid is held everted to show the vesicular granulations just within its border, and also on the conjunctiva of the lower palpebral sinus. The upper lid is slightly elevated to allow the upper part of the cornea, which is the seat of the pannus, to be fully seen. See pp. 107, 258—260.

Figure 2.—A case of acute parenchymatous corneitis in which, with considerable redness of the white of the eye, there is exudation of lymph and development of new vessels in the proper substance of the cornea. In this case, the cornea presents the peculiar opalescent appearance. See p. 197.

PLATE II

Fig.1.

Fig.2.

H. Adland sc.

PLATE I.

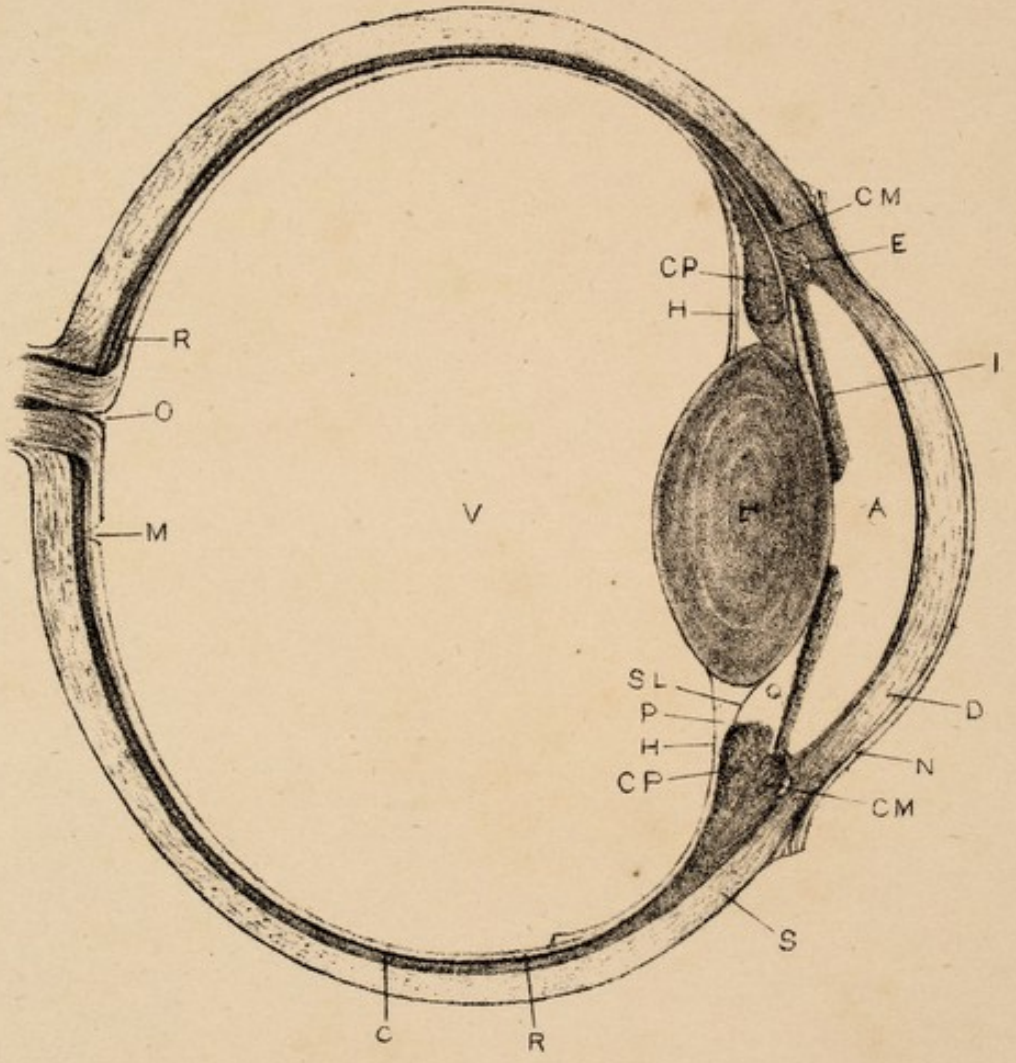
Fig 1.

Fig 2.

Fig 3.

H. Adlard, sc.

PLATE I.



W West & Co. Chromo-lith.

PLATE I.

Diagram of the Human Eye in Section.

S. Sclerotic; continued in front into
D. Cornea.
N. Epithelial layer of cornea.
C. Choroid.
I. Iris.
CP. Ciliary processes.
CM. ,, muscle.
E. Circular sinus.
R. Retina.
M. Macula lutea.
O. Optic disc.
S.L. Suspensory ligament of lens.
H. Hyaloid.
P. Canal of Petit.
V. Vitreous.
Q. Posterior chamber.
A. Anterior chamber.
L. Lens.

PLATE II.

FIG. 1.—*Simple Conjunctivitis.*—Both the orbital and palpebral portions of the conjunctiva are hyperæmic or "blood-shot." The everted lower lid is red and villous, and numerous vessels are seen ramifying over the white of the eye, appearing to terminate at the margin of the cornea. (After Dalrymple, Plate VII. fig. 6.)

p. 165.

FIG. 2.—*Purulent Conjunctivitis.*—This figure exhibits the intense vascularity and chemosis of the conjunctiva just prior to the second or discharging stage of gonorrhœal ophthalmia. The cornea is still clear, but sunk in the folds of the conjunctiva. (Dalrymple, X. 4.)

p. 177.

PLATE II.

1

2

W. West & Co. Chromo lith.

PLATE III.

1

2

W West & Co. Chromo lith.

PLATE III.

FIG. 1.—*Pustular Conjunctivitis.*—On the conjunctiva, to the outer side of the cornea, is seen one of the so-called "pustules" or phlyctenulæ, and a leash of red vessels is seen feeding it. Another appears just over the margin of the cornea, which is bluish and opaque, from having been the site of former pustules. (Dalrymple, XIII. 3.)

p. 217.

FIG. 2.—*Plastic Iritis.*—This figure represents the early stage of inflammation of the iris. A pink zone of sclerotic injection is seen surrounding the cornea, which is itself clear and unaffected. The iris is dull, and the margin of the pupil somewhat different in colour from the rest, and slightly irregular. The conjunctival hyperæmia is trifling. (Dalrymple, XVIII. 1.)

p. 304.

PLATE IV.

W. West & Co. Chromo. Lith.

PLATE IV.

FIG. 1.—*Fundus of the Healthy Eye* (European).—The general colour is orange-red, while the optic disc is yellowish-white. The central artery and vein of the retina are seen emerging from the disc and ramifying over the fundus. The arteries present a double contour; the veins are larger and more distinct.

FIG. 2.—*Fundus of the Healthy Eye* (Native of India).—The colour of the fundus is a brownish-grey, and the optic disc of a pale rose tint. In other respects it resembles that of the European.

p. 40.

PLATE V.

W. West & Co. Chromo. lith.

PLATE V.

FIG. 1.—*Hyperæmia of the Retina* (malarial, in Native).—The pink tint, which has replaced the natural grey of the healthy fundus, indicates congestion. The vessels are foggy and indistinct, from the œdematous condition of parts.

p. 396.

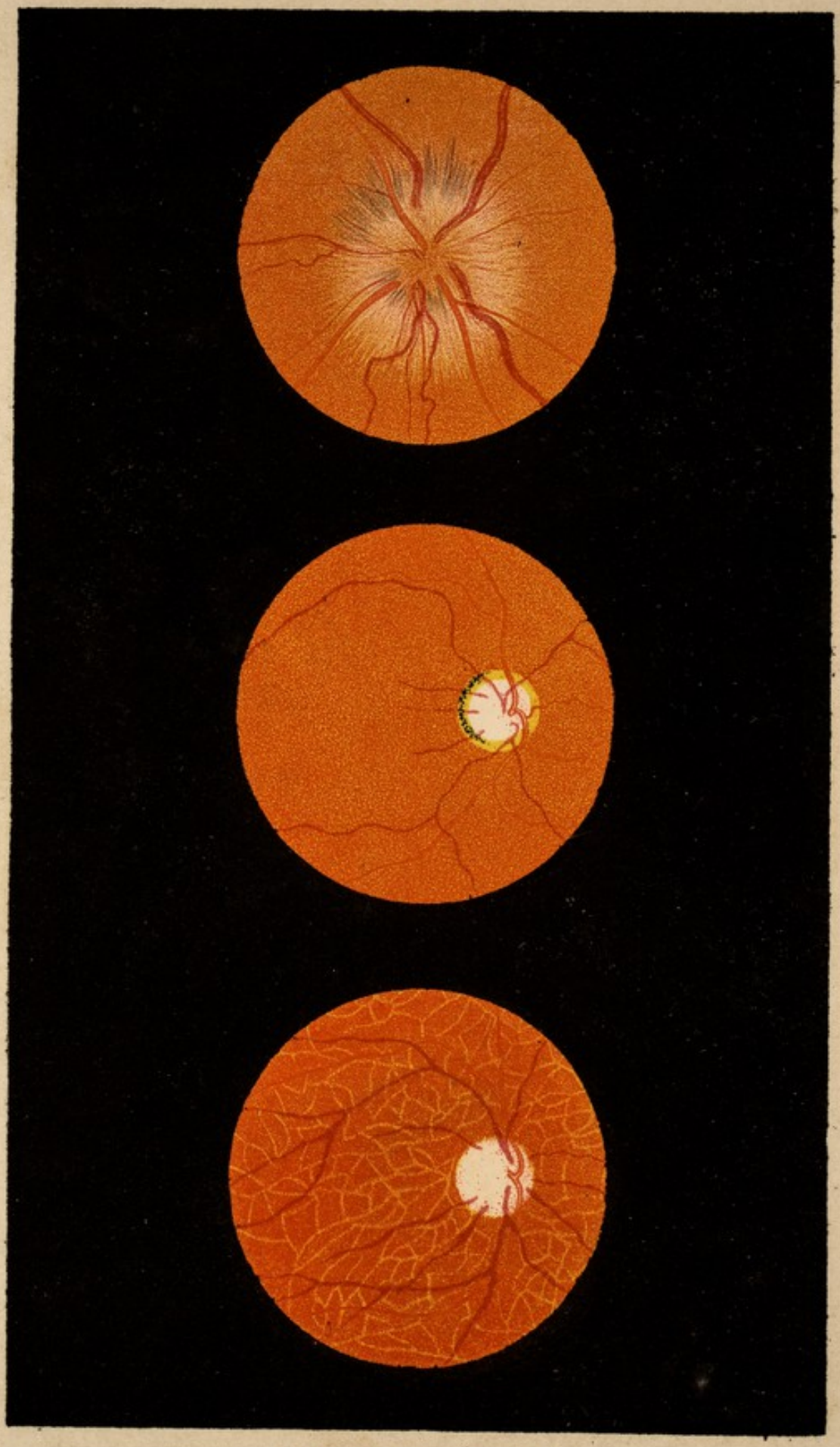
FIG. 2.—*Neuro-Retinitis in Bright's Disease.*—The white glistening patches are the product of fatty degeneration. The optic disc is ill-defined from serous effusion, and numerous small, radiating, brush-like extravasations of blood are seen scattered about. (After Liebreich.)

p. 413.

FIG. 3.—*Inflammation of the Retina.*—The optic disc is in great part of the same scarlet colour as the rest of the fundus: the whole appears hazy and œdematous. The central artery is of normal size, but the vein greatly enlarged and remarkably tortuous. (After Jaeger.)

p. 405.

PLATE VI.



1

2

3

W. West & Co. Chromo lith.

PLATE VI.

FIG. 1.—*Optic Neuritis.*—The fundus is uniformly scarlet, and the optic disc and entrance of the retinal vessels surrounded and veiled by an œdematous haze. The vein is deeply congested and tortuous. (After Liebreich.)

p. 450.

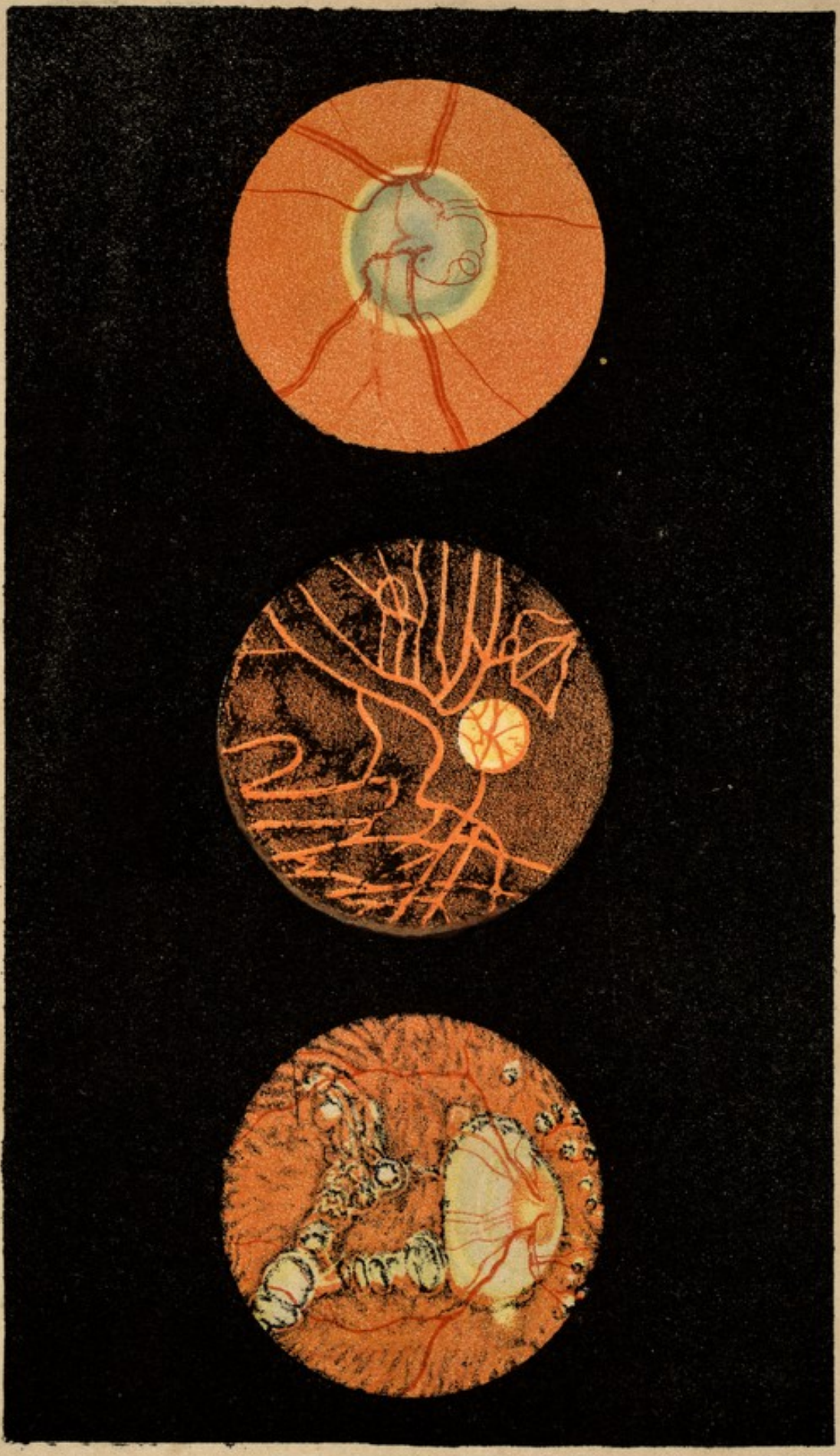
FIG. 2.—*Consecutive Atrophy of the Papilla.*—The result of optic neuritis. The disc is whitish and flat, and presents an irregular margin, with black pigmentary deposits. The vessels are small and contracted. (Altered from Galezowski, Fig. 6.)

p. 452.

FIG. 3.—*Primary Atrophy of the Papilla.*—The optic disc displays the pearly-white, circular, and flat appearance which is characteristic of the disease. The retinal vessels are of normal size and appearance. (After Galezowski, Fig. 5.)

p. 457.

PLATE VII.



W. West & Co. Chromo lith.

PLATE VII.

FIG. 1.—*Glaucomatous Excavation of the Optic Disc.*—The cup extends up to the edge of the disc. The disc is surrounded by a light ring, due to reflection of light from the anterior laminæ of the scleral ring. The dilated vessels, when they arrive at the margin of the disc, are seen to make an abrupt curve as they descend into the cup.

pp. 371, 372.

FIG. 2.—*Retinitis Pigmentosa*, or *Pigmentary Atrophy of the Retina and Choroid.*—The dingy mottling of the fundus arises from the irregular pigmentation of the choroid: where the pigment is scanty or absent, the choroidal vessels are exposed. The retina is atrophied, and towards the circumference are seen the black, spider-like pigment-masses which characterize the affection. The disc is whitish and the vessels dwindled.

pp. 416, 419.

FIG. 3.—*Partial Atrophy of the Retina and Choroid, after Retino-Choroiditis. Large Posterior Staphyloma.*—The optic nerve entrance is slightly reddened, and seen in an oblique projection, that is, as an oval disc, on account of the staphylomatous distension of the posterior scleral one. The staphyloma is shaped like a shell, tendinous in appearance, of a bluish colour, and graded almost like a miniature terrace. The border contains a great deal of pigment. Above and below, touching the staphyloma, there is a small roundish, pale-red mass of exudation. To the outer side of the scleral staphyloma are two groups, connected to each other, of ancient inflammatory centres, roundish in shape, and already advanced in atrophy, through which the sclerotica glimmers, and which appear mostly surrounded by a ridge of dark pigment. On the inner half of the fundus are numerous scattered small atrophying spots, surrounded by pigment, as well as some recent ones of a yellow colour. The whole fundus has a tesselated appearance. (After Stellwag von Carion.)

p. 385.

RAMC 612

No.

Male. Female.

Race *Department or Occupation* *Rank*

Caste

Name *Age*

Temperament *Service*

Residence in India *Amount of* { *Sick leave* / *Furlough*

Date of last return from leave.

Family History

Father alive aged Unhealthy Died aged of

Mother „ „ Unhealthy Died „ „

Brothers „ „ Unhealthy Died „ „

Sisters „ „ Unhealthy Died „ „

No Heart disease. No Stone. No Cancer. No Gout. No Rheumatism.

No Phthisis. No Insanity. No Epilepsy.

Patient's previous History.

Born at Resides now at

Childhood and adolescence, Strong. Medium. Delicate. No Fits.

Adult life. Strong. Medium. Delicate.

Habits—irregular, intemperate, free, careful, teatotal, alcohol, smokes, food, clothing, cleanliness.

Work—active, sedentary. In, out door, long hours, night work. Contagion, Heat, cold, draughts, damp, chills, mental depression, worry, fatigue, excitement.

Relaxation—never, rarely, occasionally, regular, not athletic, not strained.

Single, married. Sons Daughters Good Health. Miscarriages at month.

No measles. No whooping cough. No scarlet fever. No dropsy. No acute Rheumatism.

No Ch. Rheumatism. No Gout. No Rh. Gout. No Typhoid. No Diptheria. No Influenza.

No Syphilis. No Megrim. No Eczema. No previous attack of same nature. No Fever.

Present Illness.

Began on suddenly, gradually with pain, fever, rigor.

Off work from In bed for

Recurrences of

Treatment.

Regained Lost strength Wasted

Complains of

Comes for Advice Because

Present Condition.

Height Ft. in. . Weight St. lbs. .

Build—Fine, strong, medium, delicate, stout corpulent, well nourished, muscular, spare, wasted, erect, stooping.

Complexion—Pale, flushed, bilious, hectic, florid, rough, smooth, scarred.

Expression—Calm, hopeful, cheerful, anxious, suffering, excited, depressed.

Position assumed.

Gait. Stiffness. Loss of power in

General.

No weakness. No weariness. No languor. Not very anæmic. No œdema of feet, eyelids. No sweats. No chills. No wasting. No urgency. No paralysis of Not senile. "Looks ill" Not growing.

Skin moist, Dry. Temperature. Rash.

Alimentary System.

Appetite Variable. Afraid. Drinks. Teeth. Gums. Tongue. Taste. No discomfort. No flatulence. No acidity. No nausea. No sinking. No vomiting.

No pain in by food.

Bowels ce daily. No constipation. No diarrhœa. Motions pale, grey, yellow, brown mucous, blood. No pain. No straining. No Hœmds.

Liver—enlarged, contracted. No jaundice.

Spleen—enlarged.

Lymphatic System.

Genito-urinary System

Urine—Volume passed in 24 hours, Not clear. Colour. Acid. Alkaline, neutral. sp. gr. 10.

No albumen. No sugar. No phosphates. Urea.

Micturition painful, difficult, incontinence. Rises nightly ce. Irritability of bladder. Prostate. No stone. No gravel. No deposit. No thick urine.

Microscopically—No casts. No crystals. No pus. No blood. No epthelium. No lumbar pain. No itch. No cramp. Falls asleep in day.

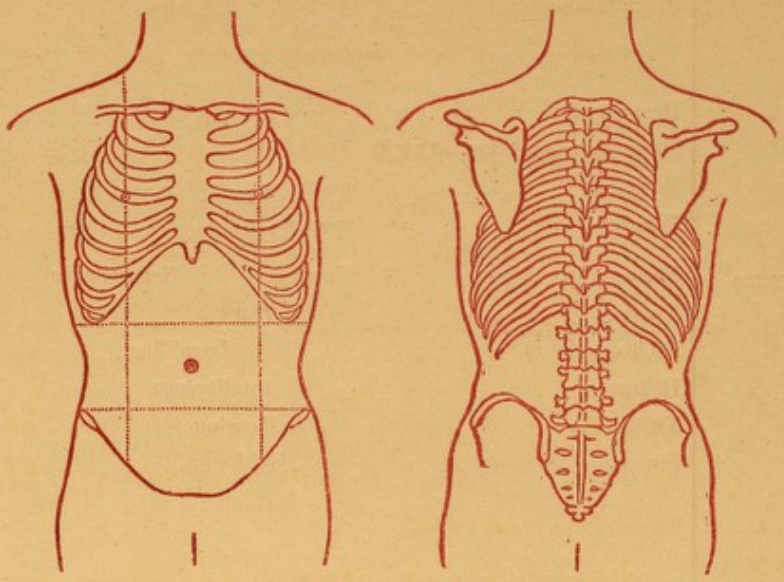
Menstruation—Irregular. Amount . No pain. No leucorrhœa. Mammary glands.

Joints and limbs.

Symetrical. Swollen. Pain.

Discoloured.

Circulatory system.



Pain—No precordial. No angina. Down L. R. arm to Neck Head Back Leg
No oppression. No choking. No heaviness. Indescribable. Uneasiness. Emotion.
Palpitation—No diurnal. No nocturnal. No violent. No painful. No flutter. With no
dyspnœa. Induced by food, exertion, excitement. No intermittent pains felt. Duration.
Relieved by Followed by
No faints. No faintness. No giddiness. No sinking. No falling. No lethal sensation.
Causes.

Hæmorrhage from

Pulse—No variable frequency, irregularity, intermission. *Size.*—large, medium, small, variable.
Tension between beats—hard, full, medium, soft, dicrotic, empty, collapsed.
Force of wave—strong, medium, feeble, imperceptible, variable.
Qualities—sudden, jerky, slow, bounding, fails on inspiration, elevation of arm, symmetrical, delayed.
Wall—thick, thin, tortuous.
Extremities—cold, hot, damp, livid, red.
Heart—apex beat. Area dullness. Impulse. Thrill, murmur loudest at carried to.

Pulsating Tumour Varicose veins.

Respiratory system.

Respiration—quiet, difficult, spasmodic, painful.
Cough—rare, frequent, noisy, hacking, strident, wheezy. When
Epiglottis Tonsils.
Expectoration—Mostly morning; thick, thin. White, yellow, green, brown, black; frothy, mucous,
purulent, rusty, not foul. Shape of chest bulging Sinking
movements irregular. Vocal fremitus resonance, dullness.
Line unaltered by position.

Auscultation

Hæmoptisis streaks, stains.

Dyspnœa on exertion, at night.

Voice hoarseness.

Pain in sneezing.

Nervous System.

Natural disposition Now Not irritable Sleeps Insomnia

Dreams Memory

No headache in Trembling.

Delirum Intelligence.

Vision Hearing.

Stupor Giddiness.

Diagnosis.

Prognosis.

Treatment.

Indications—curative, palliative, preventive.

General—mode and conditions of life.

Medical

Operative

Diet

Wrote to

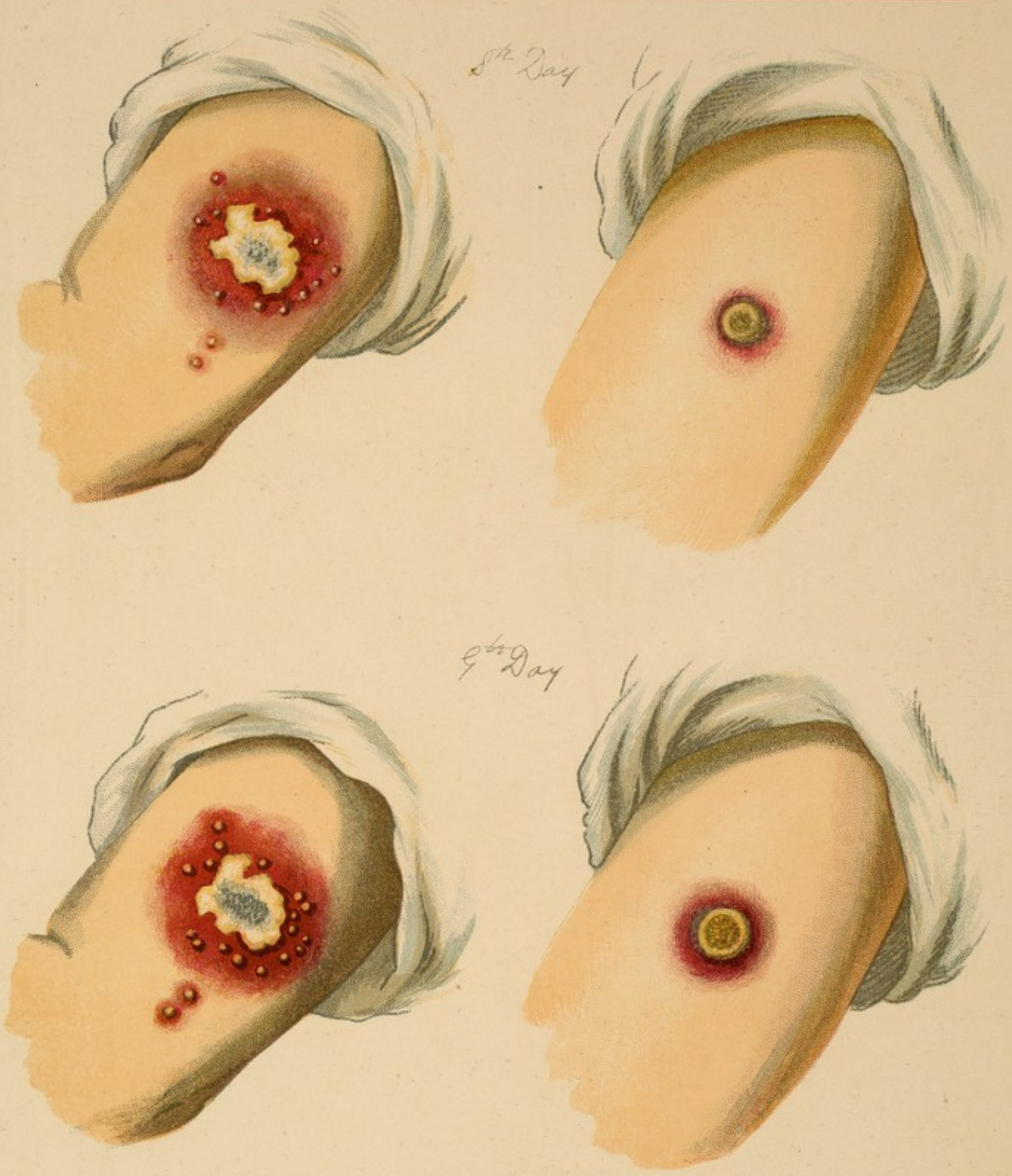
Heard from

Progress of case


The Small Pox
2d Day or 48 hours completed.
The Cow Pox
3 Day
G. Pritchard fecit 1802

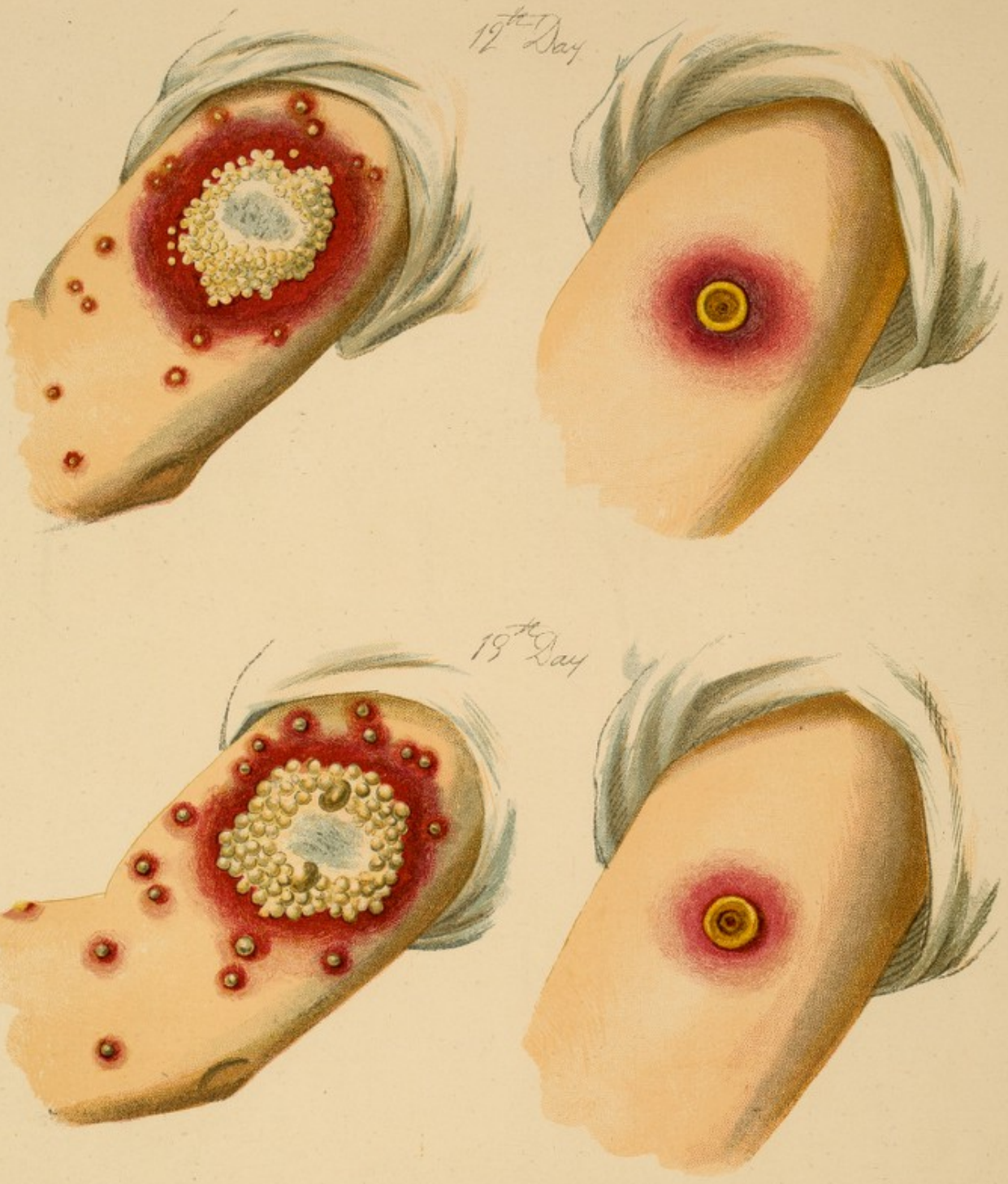

4th Day
5th Day

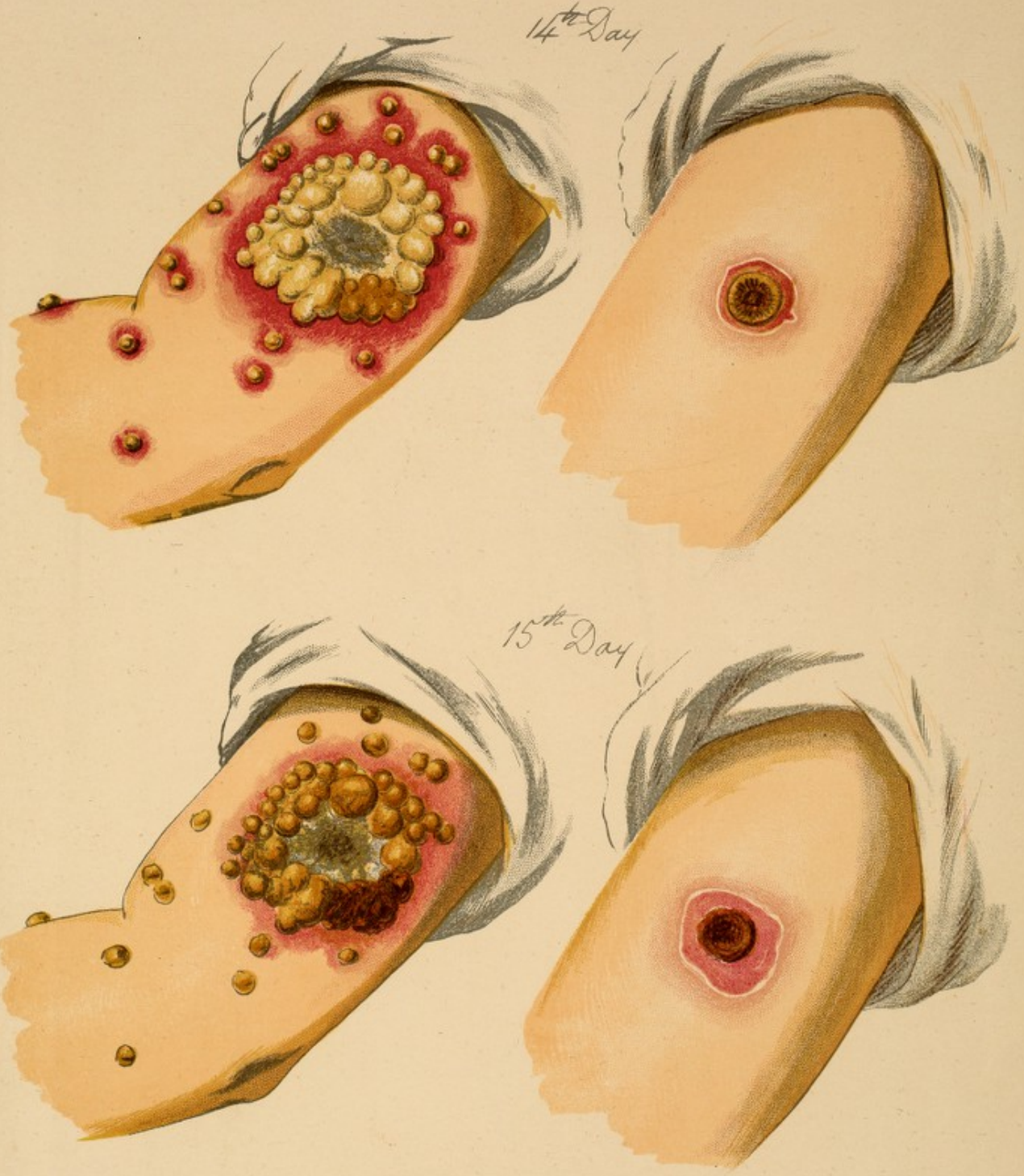

6th Day
7th Day


8th Day
9th Day

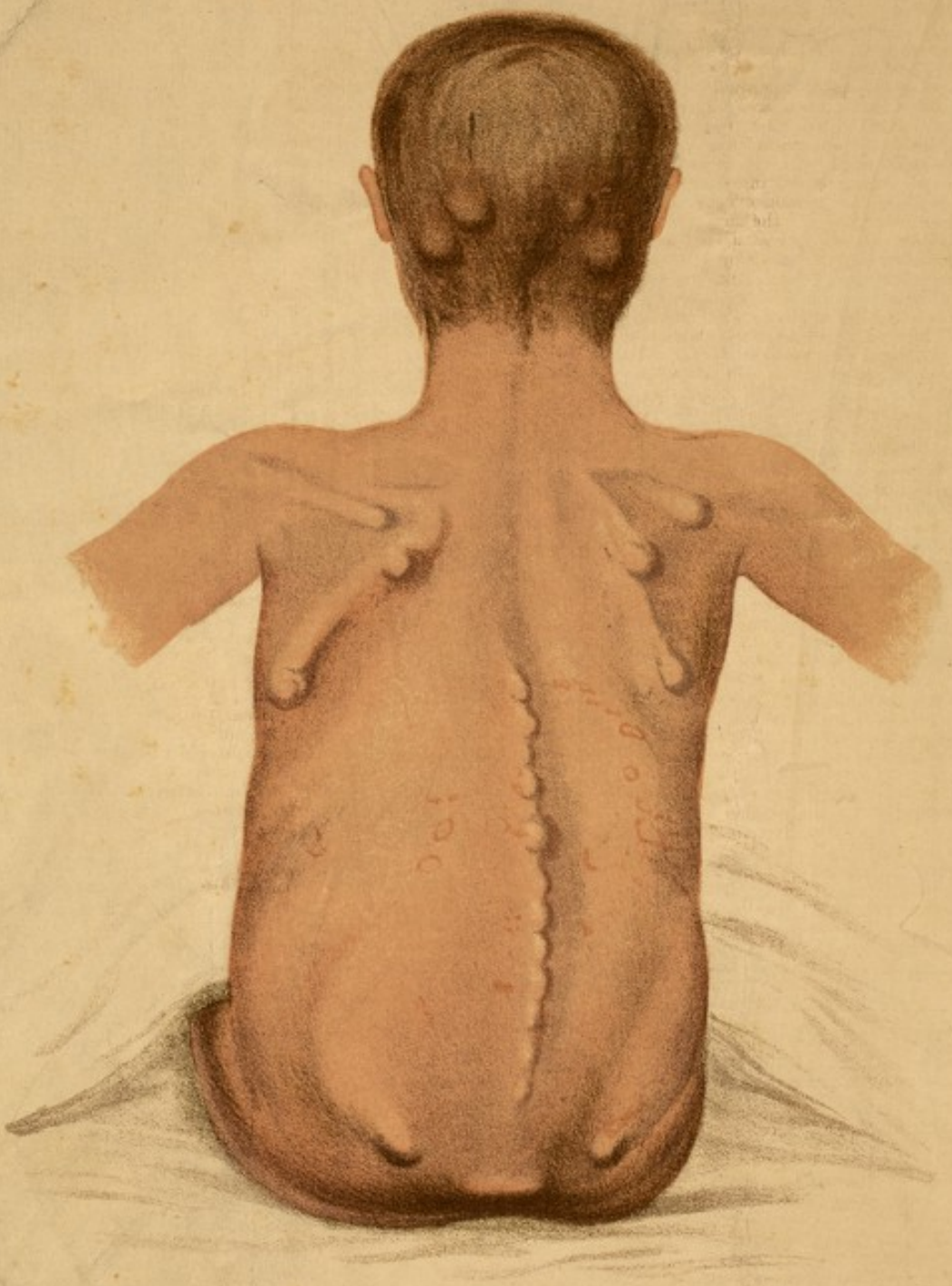
10th Day

11th Day


12th Day
19th Day


14th Day
15th Day


16th Day



Numerous large subcutaneous Nodules, in a case of Arthritis &c.
(Dr. CHEADLE'S Lectures on the Rheumatic State.)

Vincent Brooks Day & Son Lith.

PLATE I

Vertical section of a foot affected with the Melanotic or black variety of Mycetoma. See Case 1, page 3.— This was the first example seen; and the dark fungus-masses belonging to it are figured in Plate IX. Sketched immediately after amputation.

The new growth is in the form of black particles or masses, which are located in both hard and soft parts; being inclosed in a capsule and, as well, commonly imbedded in a gelatinous or fleshy material.

* * * * The sclerotioid growths in different parts of the foot.

a. Lower end of the *tibia*, in which are imbedded two globular masses, surrounded by a thin membrane; a few small, detached particles are scattered about.

b. The *astragalus*, upon which, too, masses of growth have slightly encroached.

c. The *os calcis*, which is largely occupied by the foreign bodies in question.

There is less general tumefaction than usual of the foot, in this instance; the disease being thus presented in an uncomplicated form.

PLATE I

H.V.Carter ad.nat. del. Oct. 1859.

M & N.Hanhart chromo lith.

VERTICAL SECTION OF A FOOT SHOWING THE MELANOID OR BLACK VARIETY OF MYCETOMA. *See the case at Page 3.*

PLATE II

MYCETOMA: *var.* MELANOTICA

FIG. 1.—*External appearance of the foot* described at page 4, Case No. 2.—The specimen had been preserved in dilute alcohol, but there are still evident the small, pouting orifices from which the black particles issue. The globular form of the whole foot—the Mycetoma—is tolerably well marked. Light patches in the skin are seen, which are not essentially related to the fungus-disease itself. The tarsus seems to be chiefly affected. At *, a white bristle placed in one of the openings above mentioned.

FIG. 2.—*Sectional appearance of the foot* described at page 5, Case No. 4.—Sketched immediately after operation. Here the tumefaction was considerable: the bulk of the growth occupies the centre of the foot, and the ankle and heel are free from disease; the tarsus, in front, and chiefly the metatarsus, are implicated and mostly destroyed. The new growth also occupies both sole and dorsum of the foot; and while itself forming a large part of the entire tumour, has besides excited considerable swelling in the soft parts around. This superadded tumefaction is of an œdematous or elephantoid character. The tendons are spared; and sections of two or three may be seen in the cut surface: the articulations of the foot are not especially affected. At *a*, and elsewhere, are seemingly isolated portions of the new growth; these were, however, probably connected with the main body. At *b*, is the largest or densest collection of *sclerotia*; all masses are capsulated; and their yellow-tinted, friable envelope is seen around them. At *c*, are sections of numerous canals filled with a gelatinous substance, imbedded in which are the black particles; the appearance being sometimes that of cysts laid open. At *, a bristle is passed into one of the openings of the surface, to show its connection with deep-seated masses of the growth.

PLATE II.

Fig. 1

Fig. 2.

H.V.Carter ad nat. del.

M.& N. Hanhart chromo lith.

EXTERNAL AND SECTIONAL APPEARANCES OF THE FOOT IN MYCETOMA. *(BLACK VARIETY)*

PLATE III

Mycetoma of the Hand: black variety

Fig. 1.—View of the third finger, right hand, in the case described as No. 8, at page 6. Sketched from a specimen preserved in spirit. The new growth, and the openings leading to it, are situated chiefly on the palmar aspect: the amount of swelling is not great, and the finger alone seems to have been implicated.

Fig. 2.—An entire hand, with part of forearm, seen in the anterior aspect. The former is considerably swollen; the two outer fingers are most affected, and laterally displaced: the palm is also largely implicated, and the ball of the thumb. There are apparent cicatrices near the wrist, but the growth has spread above this joint, to the extent of two or three inches. The index and middle finger, and most of the thumb, seem to have escaped destruction. The case is alluded to at page 6.

PLATE III.

H.V.Carter ad nat del. M&N Hanhart chromo lith.

MYCETOMA OF THE HAND, *(BLACK VARIETY.)*

PLATE IV

MYCETOMA OF THE FOOT: OCHROID OR PALE VARIETY. Case 1, page 8

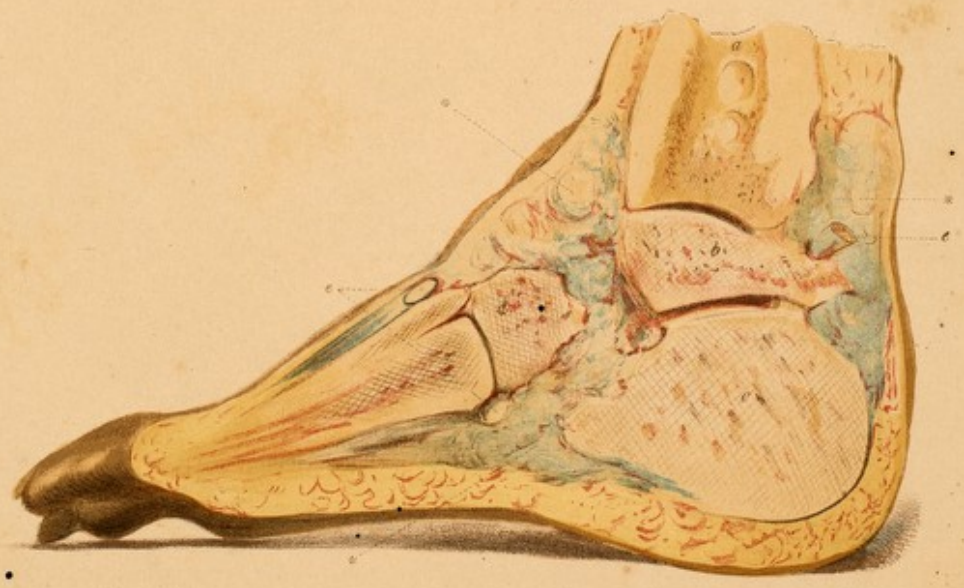
FIG. 1.—External aspect of the foot, drawn immediately after operation. The large, pale, soft swellings which are seen at **, are outgrowths of the masses within. There is not much general swelling of the foot, and the parts in front are unaffected.

FIG. 2.—Sectional view of the same specimen, sketched at the same time. The new growth is seen to consist of a greenish-tinted, gelatinous material, which is accumulated in various parts ***, encroaching on the *tibia*, *a*, the *astragalus*, *b*, *os calcis*, *c*, and as well as other tarsal bones in front, *d*. In the medullary cavity of the tibia are seen two small, pale cavities, which look as if they had once been the seat of the growth. Some of the tendons are seen to be cut across at *e*, *e*; there is no special disease of the articulations: the front part of the foot is free from implication.

PLATE IV

Fig. 1.

Fig. 2.



H.Y.Carter ad nat. del.

M.A.N.Hanhart chromo.lith.

MYCETOMA OF THE FOOT. *(OCHROID OR PALE VARIETY)* Case N°1.

EXTERNAL & SECTIONAL APPEARANCES.

PLATE V

MYCETOMA OF THE FOOT: PALE VARIETY. Case 4, page 10

This illustration, taken from the life, previous to operation, shows a common aspect of tumours of this kind, when of moderate size. The swelling was here remarkable in being limited to the inner side of the foot. Dark and light spots on the skin are seen, which are mostly due to pigmentary alterations; and there are the usual, small openings from which the pale, soft fungus-particles emerge in abundance. That portion of the foot not implicated in the growth was apparently healthy.

PLATE V.

H.V.Carter ad nat. del.

M & N Hanhart chromo. lith.

MYCETOMA OF THE FOOT, *(PALE VARIETY). Case 4. Page 10.*

PLATE VI

MYCETOMA OF THE FOOT: PALE VARIETY. Case 5, page 10

The tumour is unusually large: it involves chiefly the fore part of the foot, and does not extend above the ankle-joint. There are everywhere the usual pale, soft swellings, and at the inner ankle, the peculiar apertures of this disease. The toes are seen to be partly involved, and the outer toe is widely separated from the rest by means of the new growth. There are notable pigmentary changes in the skin, but the parts of the foot not directly implicated seem to be unchanged or only wasted. The patient was in a very reduced state of health.

PLATE VI.

H.V. Carter ad nat. del.
Satara. 1864.

M & N Hanhart chromo lith.

MYCETOMA OF THE FOOT, *(PALE VARIETY)*. *Case 5. Page 10.*

PLATE VII

FIG. 1.—Section of a part of the foot shown in Plate VI: natural size; appearance after long preservation in spirit (*vide* Prep. 302 C, Pathological Museum, R. Coll. Surg. London). There is much thickening of the soft tissues: the muscular fibres are not distinct; the bones are unchanged: the toes are displaced, from their tendons being pressed upon. There are seen several, apparently isolated portions of the growth; the largest at *a*, where the chambers or cavities lodging the pale, soft particles are particularly distinct: at *b* are sections of canals leading from these cavities to the surface of the foot. *c* is a cavity of unusual size, and having in its thick walls numerous follicles, in which are to be seen the fungus-particles, and which impart a honey-combed appearance to its inner aspect. *d* are small cavities, of diameter intermediate between that of the chamber and canal; in them, too, may be seen the fungus-masses, which generally break up into smaller fragments as they pass on their way outwards. At * is a metatarsal bone.

There is here to be noticed the yellow- or orange-tinted walls of both canal and cavities, altered somewhat in colour from action of the spirit—whence, too, the marked hollow appearance of the cavities, their gelatinous contents having shrunk away. A bristle is passed into one of the lower openings.

FIG. 2.—A view of the outer, convex surface of the small tumour which is described at page 11 (Case 7): natural size; after preservation in spirit. It shows the characteristic aspect of the openings in the cutaneous surface; namely, that of circular or oval depressions, deepest at the centre, where is the aperture giving exit to the particles. The growth was here at an early stage. A large patch of pale discoloration occupies part of the surface: some of the cuticle had desquamated.

FIG. 3.—Section through one of the circular apertures of fig. 2. *a*, epidermis; *b*, derma or cutis; *c*, subcutaneous tissue: fungus-particles were found at some distance down into this part. Magnified view.

FIG. 4.—A portion of the foot from Madura, described as Case 2, at page 9: nearly natural size. The new growth is the pink-tinted, fleshy mass here shown (*a*, *a*), which permeates the soft tissues, and excavates the bones (* * *), reaching the surface at *c*, *c*; and where divided in its course presenting the aspect of canals, as at *b*, *b*. The general tint is partly due to the presence of pink granules (fungus-particles), some of which are seen, separately, at *d*. The specimen had been preserved in spirit, before it was sawn in two and the drawing made. The pink particles are again figured in Plate X.

PLATE VII.

Fig. 1.

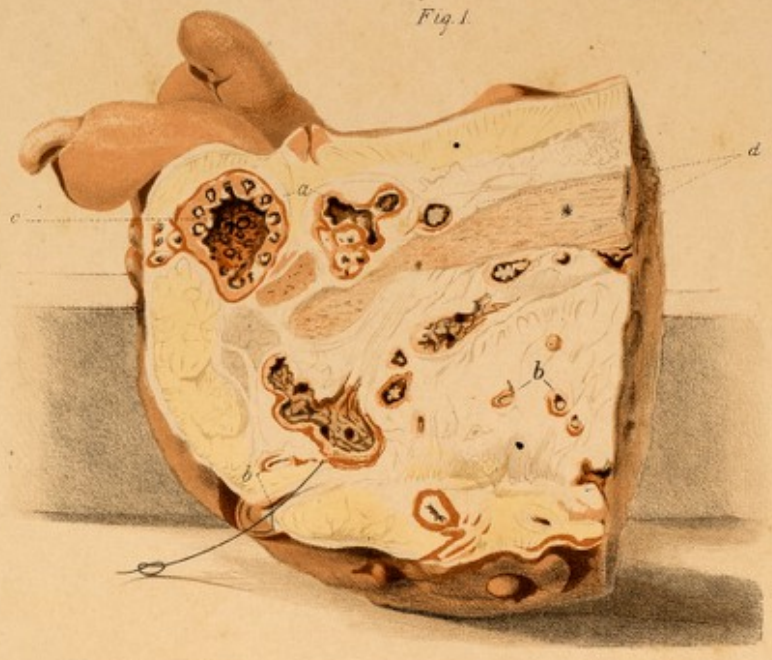


Fig. 3.

Fig. 2.

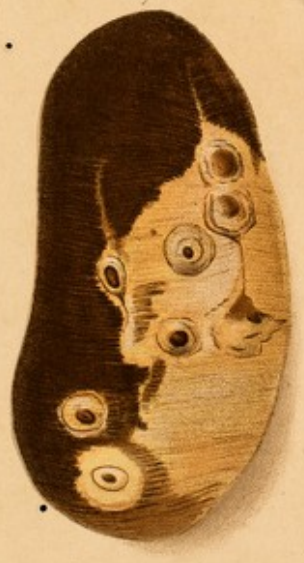


Fig. 4.

H.V. Carter del. M&N. Hanhart, chromo. lith.

PORTIONS OF MYCETOMATOUS TUMOURS. (2ND VARIETY). Natural Size.

PLATE VIII

FIG. 1.—*The bones in Mycetoma of the foot.*—At *a, a, a,* are the characteristic, spheroidal holes, tunnels, or excavations, which are produced by, and serve to lodge, the masses of new growth. It will be seen that the osseous tissue is riddled by these passages or loculi, and that with the exception of some roughening, thickening, and a few spiculæ—all the result of simple irritation caused by the presence of foreign bodies—there is no abnormal change in the bones themselves. The joints are entirely unaffected. The figure is the one alluded to in Chap. III, Sect. I, page 20.

FIG. 2.—*Mode of invasion of the growth in Mycetoma.*—An ideal section of the foot. At *a, a, a,* are cavities containing the black particles, and interspersed throughout the foot: they are lodged in the spherical excavations of both hard and soft parts above described. *b, b, b,* are canals in the tissues, leading from these cavities to the surface of the foot: they frequently communicate, and are lined by a continuous membrane; they are the channels along which the fungus-particles pass on their way to the exterior. A soft, gelatinous, or fleshy material is also contained within them, and is present also in the cavities when these are not filled with fungi; so that the appearances here of hollow passages, is only partially correct; the lumen of the channels is always filled, or else their walls are in contact. *c, c, c.* Apertures on the surface where the canals terminate: they are often very numerous, and frequently in them may be found impacted the fungus-particles. *d, d, d.* Pink-coloured stains or streaks in the skin, which are, for the most part, situated near to the apertures just mentioned, and are supposed to be owing to fresh inoculation of the foot at these spots, whence new extension of the growth proceeds. I have not attempted to show in this diagram the orange-tinted, and probably growing, coat or envelope of the new growth, which invests all the cavities and channels; but in Plate II, fig. 2, and Plate VII, fig. 1, it may be readily seen. At * * are two canals, &c., traced out of an actual specimen (that from Sind, described above at page 5), and serving, with other data, as examples for imitation in the larger figure below them. In the dilatations of the canals will be seen some of the black particles and those arranged in groups of four, or as if multiplying by outgrowth.

The above particulars refer immediately to the melanotic variety of Mycetoma, but it is believed that *mutatis mutandis,* this figure would correctly represent the disposition of the parasitic growth in the other variety of the affection.

PLATE VIII.

Fig. 1.

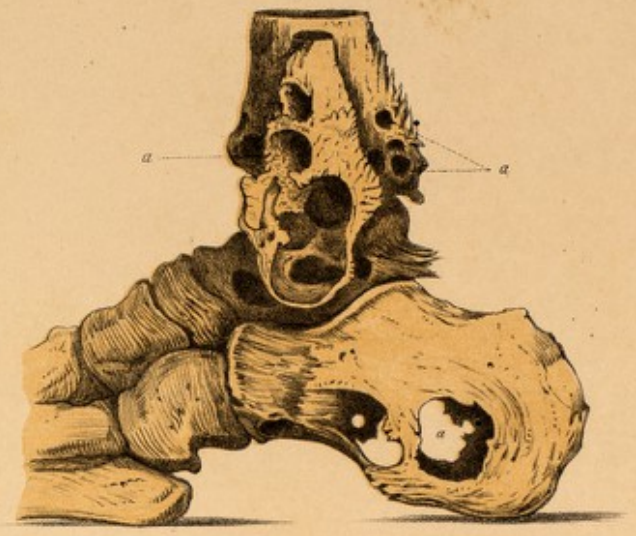


Fig. 2.

H.V.Carter del. M & N.Hanhart chromo lith.

Fig. 1. THE BONES IN MYCETOMA OF THE FOOT. *Fig.* 2. MODE OF INVASION OF THE GROWTH.

PLATE IX

Structure of the *Sclerotia* belonging to the Melanotic variety of Mycetoma. For full description see Sect. V, Chap. I, page 67.

FIG. 1.—Black particles, of natural size and appearance when perfectly fresh: taken from the foot of the man whose case is described at page 3; it was the first example seen of the disease. (*Vide* Plate I.) The large spheroidal mass in the middle of the row was taken from a cavity in the *tibia*, and it is shown in section also. A few of the small particles are introduced. In instances subsequently observed, the form and size of these bodies were even greater and more irregular.

FIG. 2.—View of the smaller black particles, when seen by aid of a lens. There is shown their flattened, botryoidal shape, and the appearance of a stalk upon the under surface.

FIG. 3.—View of the cut surface of a large particle (*Sclerotium*), when seen by aid of a lens. There is shown the dark, tuberculated rind, and the radiated construction of the interior, due to the presence of fasciculi or bundles; which, proceeding from the centre, branch and unite as they pass outward, finally terminating on the exterior in a black and expanded knob. These terminal dilatations are supposed to be the fruit-bearing segments, and being harder and more friable in consistence than the branches which bear them, they become detached, and thus form the free black particles of smaller size, so abundantly met with in the foot. Taken from the larger mass shown in fig. 1.

FIG. 4.—Minute structure of the *Sclerotia*, as displayed with a power of 2—300 diameters. *a*. The compact, cellular construction of the black, firm, peripheral part of the larger particles; it is that, too, of the main portion of the smaller particles. There is seen imbedded one of the *sporangia* described in the text, and a general radiated arrangement of the cells is apparent. *b*. The free edge of the same. Here is shown luxuriant cell-growth, by gemmation and extension. *c*. Another illustration of the same. One of the growing filaments (to the left) presents a characteristic appearance in the position of the 'nucleus' in each cell, and such as was subsequently noticed in Chionyphe when artificially cultivated. (*See* Mr. Berkeley's article in the 'Appendix.') *d*. Structure of the interior part of the larger black masses: here are seen chiefly minute, flat, pale, homogeneous filaments; very closely arranged, and often blending. Beaded fibres co-exist. The tint of these ultimate structural elements appears very light, in comparison with that of the mass which they form.

FIG. 5.—Section of the periphery or rind, at its junction with the common enveloping membrane. The rounded form of the dark-coloured tip, and the radiating disposition of its component cells, are indicated. The membrane itself, which is derived from the tissues of the foot, is seen to be perfectly separate, at least in most part; of striated and obscurely fibrous structure, and studded with numerous globules, which were supposed to be formed of oily matter. Acetic acid has been added, in order to render the animal structure more distinct. × 250 diameters.

FIG. 6.—Minute structure of 'a small brown fragment from the interior of a canal.' Here is seen what I hold to be the sprouting, *in situ*, of a small black particle, the clear colourless cells being derived from the pre-existing brown ones, and possibly giving rise to the like in turn. There is also shown, imbedded in the mass of cells, a number of the expanded vesicles, which I have compared to *gemmules* or *sporangia*. The diameter of the component cells is about $\frac{1}{3000}$ in., of the vesicles $\frac{1}{1000}$ in. There is here evidence of great activity of growth.

a, a, a. Isolated vesicles representing *gemmules* or *sporangia*, which have been taken from various specimens of the melanotic variety of Mycetoma. The variety of appearances, as regards both cell-wall and contents, is remarkable. It is probable that the true character of these organs is obscured, through their abnormal conditions of growth, but the terms just mentioned seem to indicate the differences that exist. Certainly, some of the vesicles at once sprout into beaded filaments or tubes; whilst others show grumous contents, apparently undergoing sub-division, and possess thick walls, as if they were an aborted condition of spore-vesicles.

b, b. Isolated groups of cells which were observed, during attempts to trace the connection between the dark-coloured and the colourless cells. (*See* pages 69—71.) Occasionally, it seemed as if the latter were produced from the former; whilst at other times, the order of formation appeared to be the reverse.

c. A remarkable group of cells, both pale and coloured. The large vesicle filled with finely granular contents is marked in my notes as a doubtful transitional form: it may possibly have relation to lower forms of vegetable life, as of the *Bacteria*, which seem to be connected with the fungus of Mycetoma. × 250 diameters.

FIG. 7.—*a*. Magnified view of two dark brown fungus-particles, taken from the Bellary specimen described at pp. 6 and 72. There is evidently a close similarity in general characters to the ordinary black particles, as shown in fig. 2; and there is seen a striated and radiated appearance in the interior of these bodies which is comparable to that commonly existing, as indicated in fig. 3. Two bundles of fat-crystals are shown, beneath these coloured particles, with which they were found.

b. The minute structure of these bodies. There is a distinct arrangement of filaments, but the vegetable or cellular beaded nature of the latter was not evident. It is supposed that these particles were *Sclerotia*, which had undergone a degenerative change, and had lost their primitive cellular composition. A comparison of their present structure is, however, possible, with that shown at fig. 4, *d*, as belonging to the ordinary black particle.

PLATE IX.

Fig. 1.

Fig. 2.

Fig. 4.

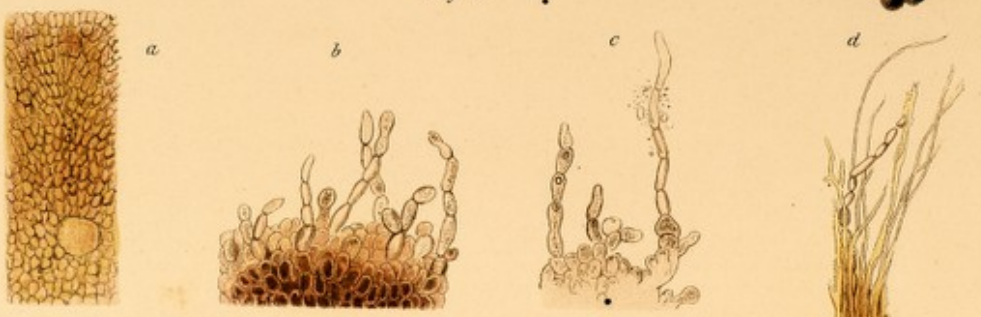


Fig. 5.

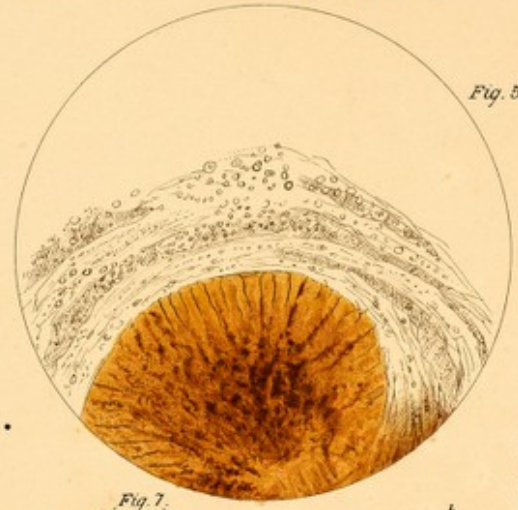


Fig. 3.

Fig. 7.

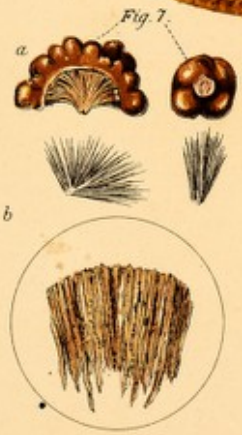
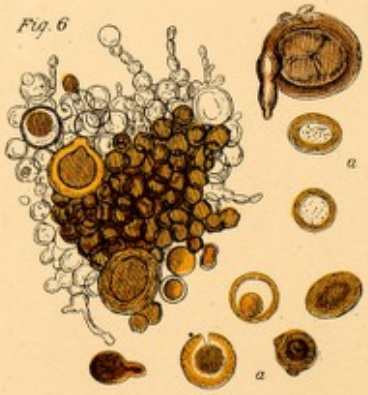


Fig. 6



H.V.Carter del.

M.A.N.Hanhart chromo.lith.

PLATE X

Illustrations of the minute structure of the fungus-particles (*Malacotia*), belonging to the pale (*Ochroid*) variety of Mycetoma.

Fig. 1.—The true fungus-elements found in the case of the woman described at page 8; for description see page 73.

a. Natural size of the particles.

b. Particles as seen magnified by aid of a lens; their normal colour, and their tuberculated exterior are here shown.

c. An entire smaller particle, as seen with ½-inch objective. Its true cellular character is apparent.

d. Free surface of the same, as seen under a higher power (× 250 diameters). The luxuriant growth and multiplication of the component cells is clearly seen; no other structures but these exist. Some of the beaded filaments have a dilated extremity, but sporangia had not formed; nor were conidia seen to be detached. At the lower part of the circle is shown the structure of the filaments described in the text, at page 73, as being present in the gelatinous matrix holding the fungus-particles, in the foot. The relation of these filaments to the particles was not made out.

e. Contents of the fluid discharged from openings in the foot. Besides pus-cells, blood-corpuscles, and granule-masses, there were seen the small collections of fungus-growth shown in the figure. Sometimes the beaded fibres were large and distinct; at others, smaller filaments were seen, shown to the right and below. × 300 diameters.

f. One of some particles, occasionally detected. They were opaque in parts corresponding to the nucleus or centre, and to certain rays passing off in a radiating manner. It seemed to me that the dark globular centre corresponded to the body of an ordinary *malacotium*; whilst the incipient rays would form its crystalline envelope; and that there was here a transition from these distinctly cellular bodies, to the more obscure ones, which are commonly found.

Fig. 2.—The pink particles found in the specimen from Madura. See page 9.

a. Natural size and appearance of the particles.

b b. Particles as seen with a power of 200 diameters. Their varying size, form, and construction are here shown. For description, see page 74.

c. A particle of different colour. It had burst open in the manner shown; and the finely-granular interior was then seen; the same appearance was present in other specimens.

d. Globules of oil, of varying sizes; they partake of the pink hue, and give rise to the general tint.

e. Collections of fat-crystals.

f. A *globe épidermique* found amongst the pink particles; there were, besides, several masses of epithelial scales, of great delicacy.

Fig. 3.—Fungus-particles (*malacotia*) of the kind commonly met with. For full descriptions, see page 74.

a. Natural size and appearance of these bodies.

b. A small collection of them, still in apposition, and retaining part of their crystalline fringe. The larger, compact aggregations, which have been compared to the 'ova of fishes,' to 'poppy-seeds,' &c., have a similar general arrangement of the particles and fringes. Taken from a perfectly fresh specimen just removed from the foot. × 200 diameters.

c. An ideal particle, but founded on fact. In the centre is the essential element—the malacotium—of globular form and tinted hue; and surrounding it, on all sides, is the crystalline envelope, which is regarded as being composed of the more solid fat-principles. At * is one of these fatty corpuscles of a complicated character.

d. One of the particles taken from the Bhooj specimen, described at page 9, and here represented as showing certain peculiarities. The interior of the compressed mass is seen to contain several ovoid bodies, which had a certain resemblance to spores, or secondary cells, but which were, probably, globules of oil; and the crystalline envelope was here of more complicated construction than usual. × 250 diameters. *See* page 76.

e. The appearance of a 'malacotium,' as viewed with a power of 700 diameters. The specimen had been preserved in dilute alcohol.

f. A portion of the same, more highly magnified.

Fig. 4.—Structure of the membrane investing the black particles and lining the canals; as seen in the specimen from Bhooj, described at page 4. There are—1, a fibrillated structure; 2, myriads of cells or nuclei; 3, tubes filled with cells or nuclei; but these latter are not shown in the original figure.

Fig. 5.—Structures found adherent to, or imbedded in the above membrane. It would seem as if the growth of a mycelium had commenced in this instance; *see* page 70. × 200 diameters.

Fig. 6.—The structure and arrangement of the 'pink stains,' which are supposed to indicate an incipient stage of growth of the fungus-particles. *See* page 78.

a. From the skin of the said specimen (melanoid variety, Case 3, page 4). The appearance is as if some natural tubes or ducts had become filled with coloured granules; an isolated, spheroidal group is seen, the individual particles forming which had a diameter of $\frac{1}{4000} - \frac{1}{2000}$ in.

b. Other pink stains in the skin. Collections of coloured granules are seen, which are probably 'zooglœa-forms' appertaining to the early stage of the parasitic growth.

c. From the same foot. Here are various structures, described in the text, which seem to indicate stages in the development of the fungus-particles.

Fig. 7.—Other like structures from a specimen of the Ochroid variety of Mycetoma; that, namely, from Bhooj. *See* page 80.

a. Bodies found free, in a section made near the toes.

b. Another 'zooglœa-mass' from the same part.

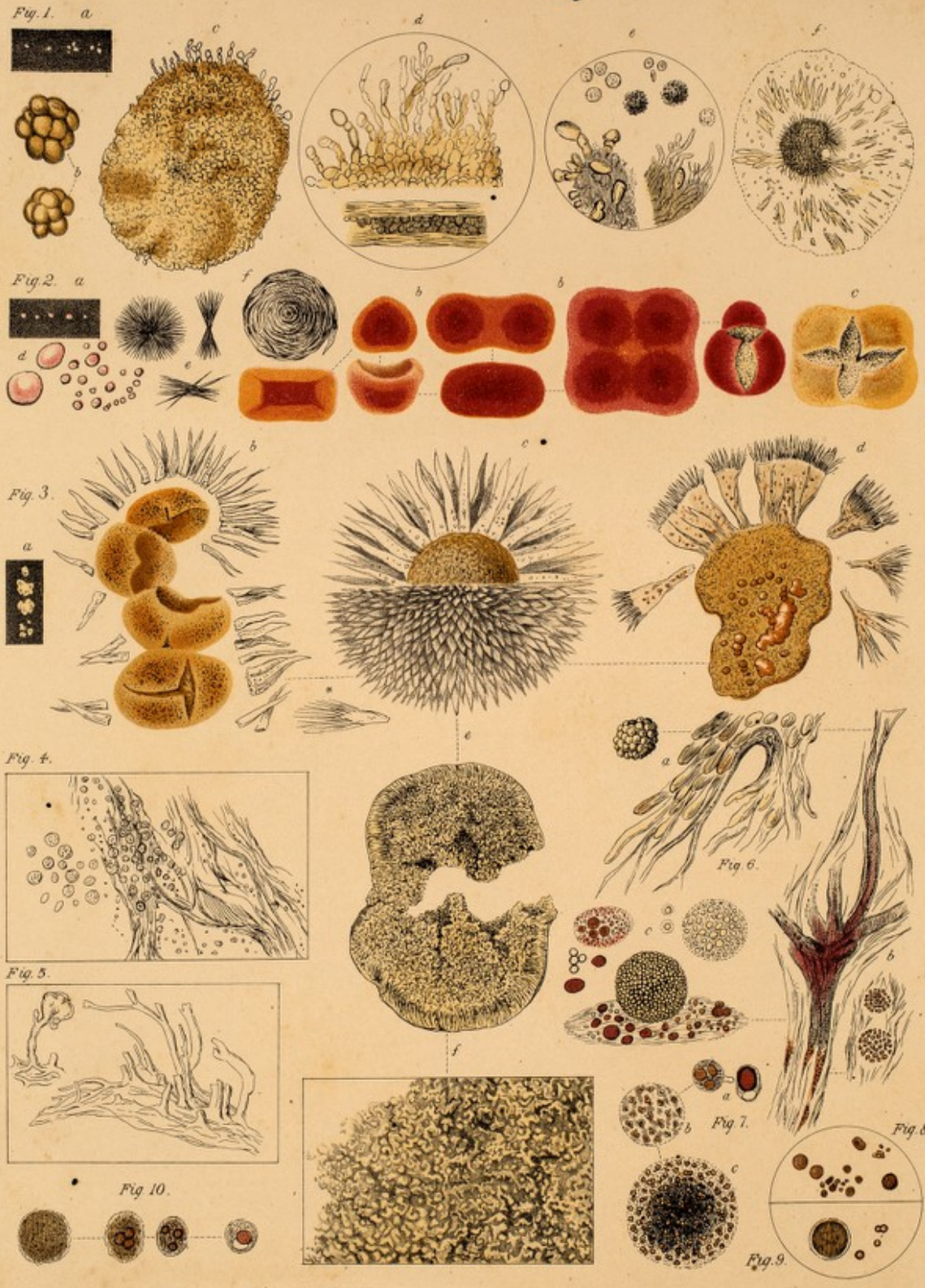
c. A still larger similar collection.

Fig. 8.—Bodies seen in the substance of the skin, in a perfectly fresh specimen of the pale variety of Mycetoma, (Case 4, page 10) + acetic acid + glycerine. Some of them were seen in close contact with the sweat-ducts, but not, to all appearance, within them. They were arranged in streaks, not unlike those seen elsewhere.

Fig. 9.—Bodies taken from the same specimen; they were found alongside a tendon, in its sheath.

Fig. 10.—Structures seen near the aperture of a canal (Bhooj specimen, second variety). They seem to indicate the mode of origin of the soft, pale particles; commencing at the right hand and proceeding towards the left, the gradual transition of forms may be seen, which intervene between bodies like those found in the skin, and the mature malacotium.

PLATE X.



H.V.Carter del.

M & N Hanhart chrom. lith.

PLATE XI

Spontaneous and Artificial Development of Chionyphe Carteri, *Berk.*

Fig. 1.—Appearance and structure of the crimson mould as it occurred spontaneously upon a specimen of Mycetoma. *See* page 87.

a. Natural appearance of the red mould, at its free surface.

b. The same surface seen through a lens, showing its finely tuberculated aspect.

c. Vertical section of the thicker part of the growth: natural size.

d. Constituent parts of the deep-tinted, flocculent superficies of the new growth × 200 diameters. Here are seen *spore-capsules* of spherical shape, and of varying size; some are coloured, the others colourless; and stages in the growth of both forms seem to be represented in vesicles either tinted or clear, also here present. Dimensions of the larger coloured sporangia $\frac{1}{4\,0\,0}$ in.: of the larger, colourless ones, $\frac{1}{3\,5\,0}$ in. The vesicles vary in size. One of the sporangia having burst, a number of *spores* are set free; these are of oval form, and measure $\frac{1}{4\,0\,0\,0}$ by $\frac{1}{8\,0\,0\,0}$ in. The *mycelium-fibres* are also of different appearance: the more delicate colourless ones are no larger than $\frac{1}{1\,0\,.\,0\,0\,0}$ to $\frac{1}{7\,.\,0\,0\,0}$ in. diam.; the coloured, and jointed ones, measure $\frac{1}{4\,0\,0\,0}$ in. Stages in the formation of these fibres are also seen. There are numerous granules and some irregular masses of pigment.

e. Structure of the great mass of the growth: friable, buff-coloured, and tearing longitudinally (like the stalk of a mushroom). Here the *vesicular fruit* is seen in its normal stalked position: there is apparently no *columella* projecting into the capsule. Stages in the development of the sporangia are seen. There is no sign of fructification by conidia-bearers. The *mycelium-fibres* are shown in different states of growth and size: one of them presents the beaded appearance with a particle, or nucleus, near to the joint, which was observed in the *sclerotia* (Plate IX, fig. *c*), and has been more particularly described by Berkeley.

f. Structure of the subjacent, pale, tough material; also friable, however, and readily tearing up in all directions. It consists of *mycelium-fibres* of varying appearance, of free globules, of sprouting spores, and of pigment masses.

g. A diagram of the foot upon which the new mould appeared, to show the appearance, position, &c., of the latter. At * is the spot whence the specimen of the growth above described was taken. The foot is that of the woman whose case is described at page 8.

Fig. 2.—View of the appearances presented by one of the pale fungus-particles, taken from the foot of the young man whose case is described at page 10. Water only has been added. × 200 diameters. To show certain very delicate filaments, too small to be measured, branching and curved, and looking like strings of oscillatoria, but not moving and seen immediately after amputation. They are not like the fine crystalline fringe, which generally assumes a straight, parallel, or radiated disposition. Some were free, and others appeared to be connected with the animal cells. As these filaments were more abundant on the second day than the first, it may be supposed that they are the result of decay: they persist after the addition of the strongest re-agents. (Author's notes).

* The *malacotium*, whence these new growths proceeded. *See* text, page 91.

Fig. 3.—Sketch from my note-book of *Chionyphe Carteri*, as it seemed to arise out of the interior of a malacotioid particle,* which had been sown in rice. The experiment is described at page 91. Growth has proceeded so far that vesicles were appearing at the ends of the mycelium-fibres: the pink tint was obvious.

I would repeat that the 'red mould' has here been called 'Chionyphe,' not altogether from the characters shown in my early illustrations; but, as well, from Berkeley's identification, based upon specimens he had himself examined. There is no doubt, however, that these figures accord with such identification, so far as they are illustrative of a specific form; and for other pictorial details, recourse should be had to the sources mentioned in the 'Appendix,' page 110.

PLATE XI.

Fig. 1.

Fig. 2.

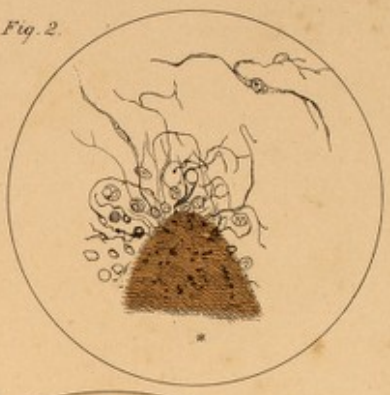
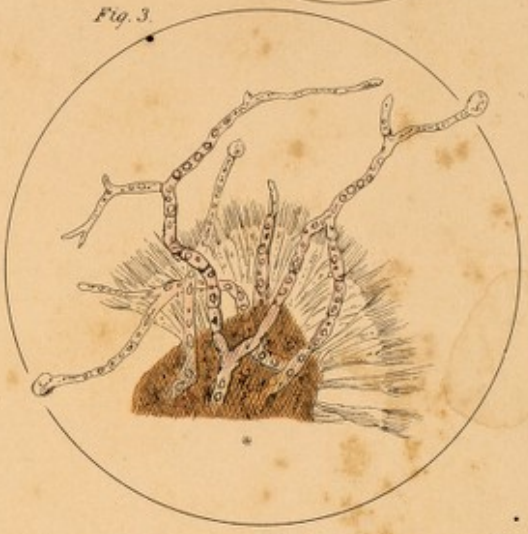


Fig. 3.



H.V.Carter del.

M&N Hanhart chromo lith.

SPONTANEOUS AND ARTIFICIAL DEVELOPMENT OF CHIONYPHE. C.