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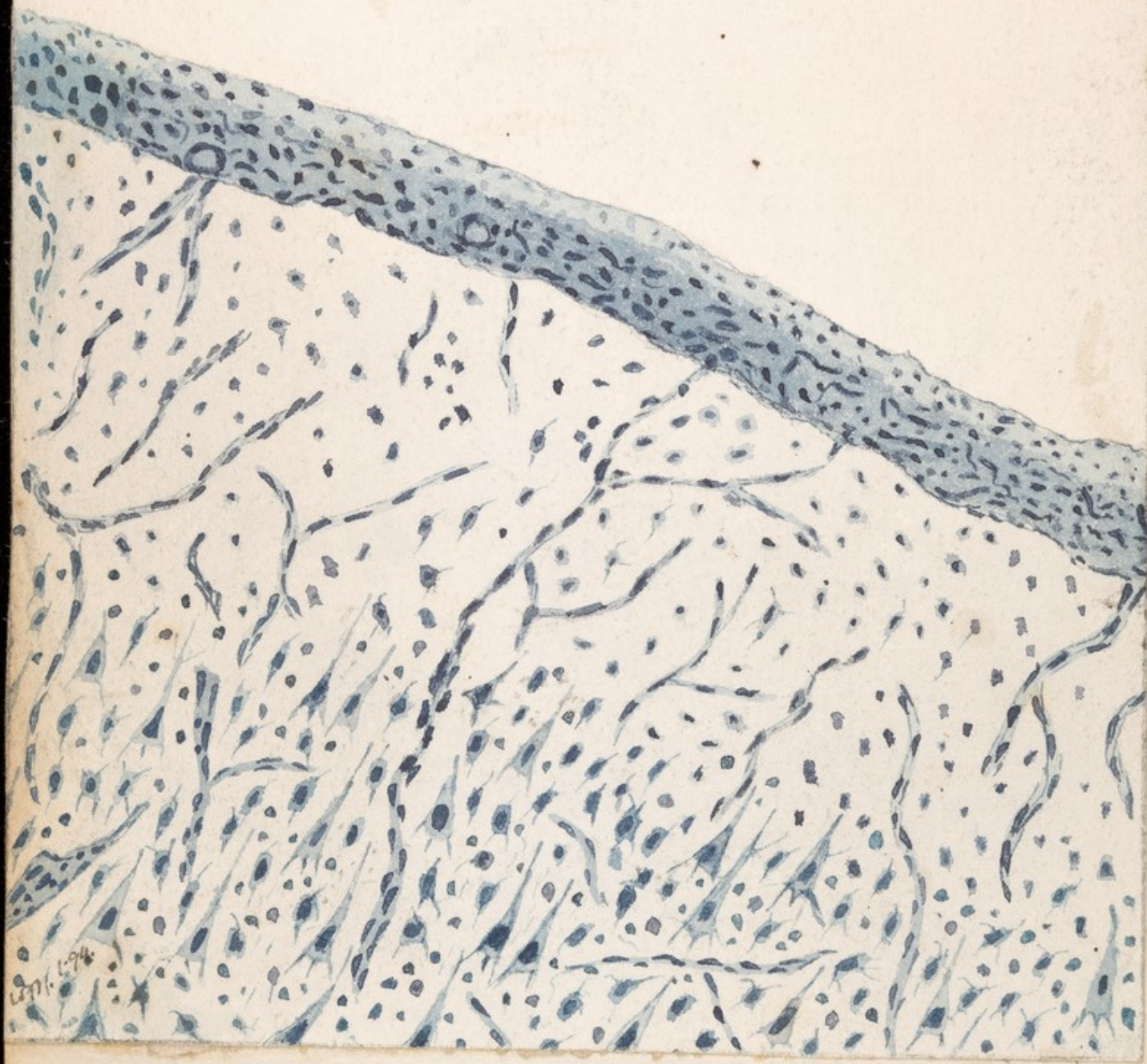
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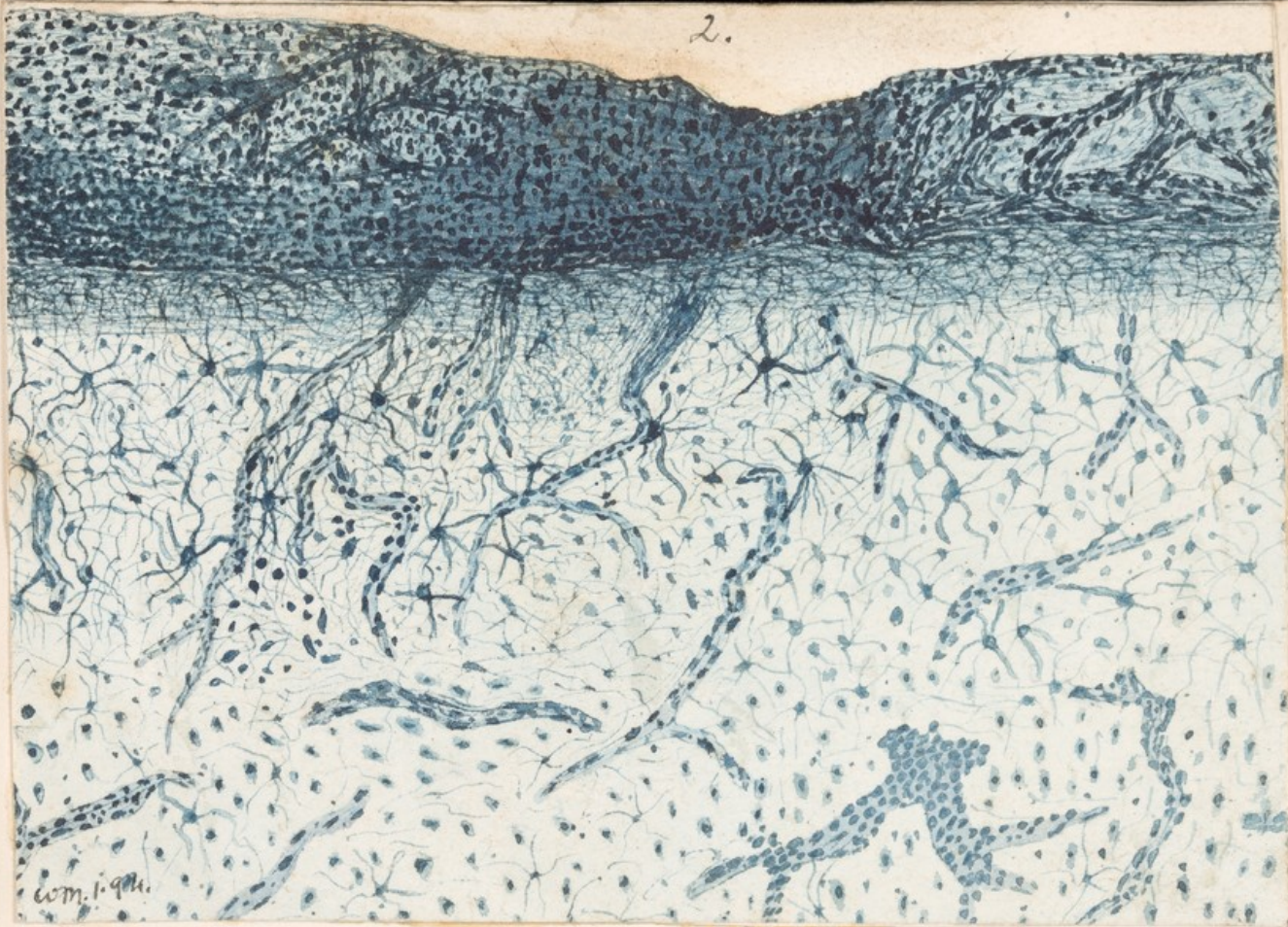
1.



Normal human brain. Motor cortex.  
Pia mater and first and second layers of  
grey matter. From section prepared by Bevan Lewis's  
fresh method. X 500.



2.



Pia mater and first and second layers of motor cortex from case of advanced general paralysis of the insane. From section prepared by Bevan Lewis's method.  $\times 350$ .

3.



Normal capillaries of human brain.  
From section prepared by Bevan Lewis's  
method.  $\times 500$ .



4.



General paralysis of the insane.  
Capillaries in grey matter. Irregular thickening,  
granularity, & proliferation of nuclei.  
From section prepared by Bowen Lewis's method.  $\times 500$ .

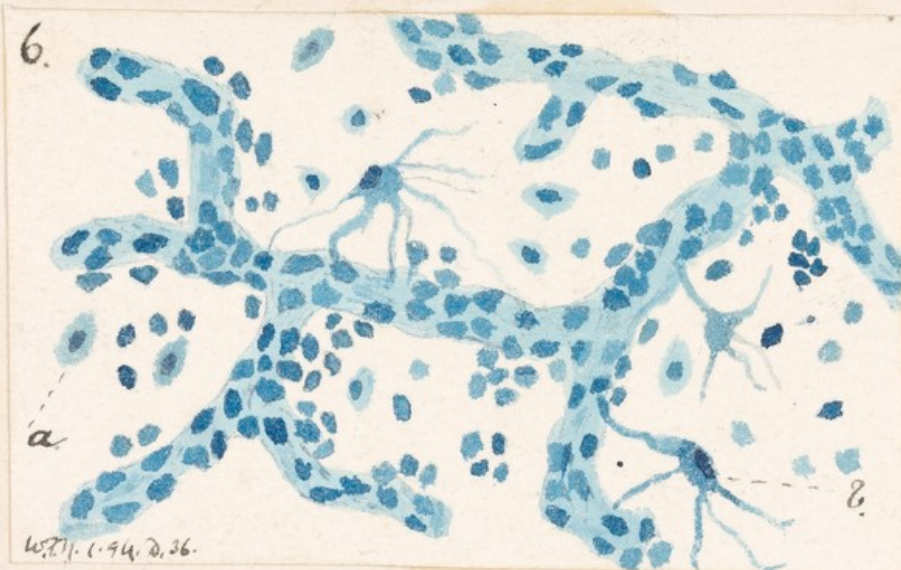
5.



Normal arterioles of brain of  
child. From section stained with aniline  
blue black. (Revan Lewis's method)  $\times 500$ . D.29.



6.



Capillaries in the grey matter in a case of General Paralysis of the insane, as seen in a section prepared by Bowen Lewis' fresh method. X600. D. 36.

Irregular thickening and granularity; great proliferation of perithelial cells. a. Degenerated nerve cell. b. spider cell.

7.

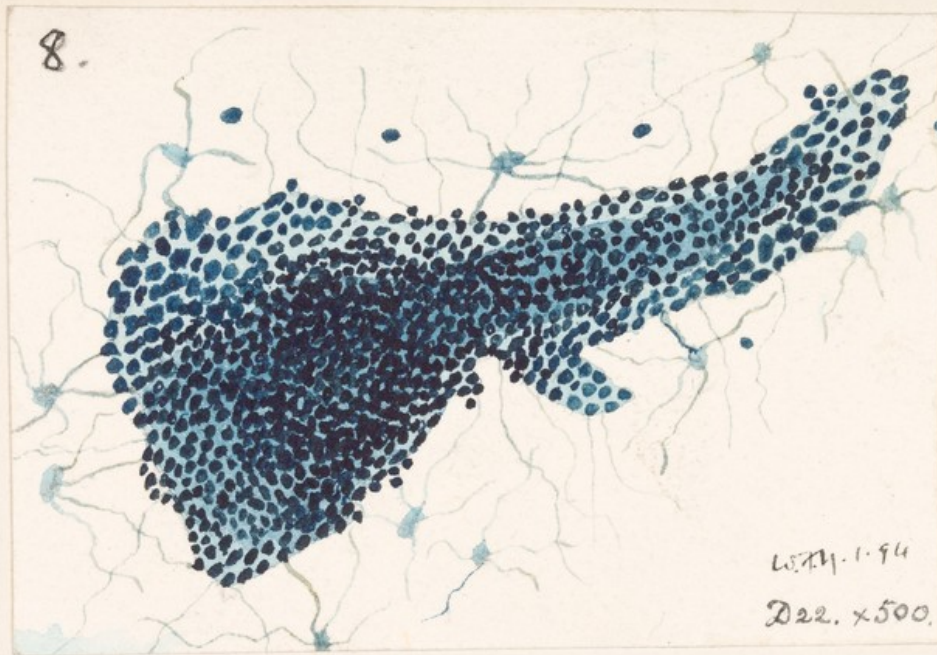


Deepest layer of cortex in a case of advanced general paralysis, as seen in a section prepared by Bevan Lewis's method. (x 500)

Shows thickened capillary, spider cells with vascular processes, and degenerated nerve cells.

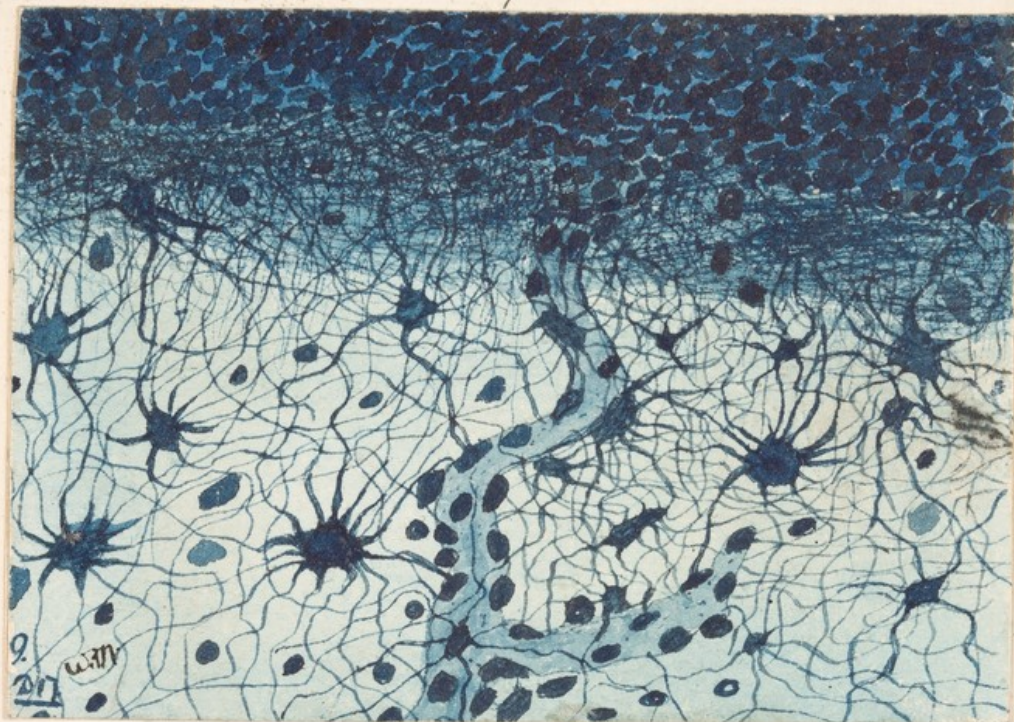


8.



Arteriole in grey matter of motor  
convolution in a case of advanced  
general paralysis of the insane,  
as seen in section prepared by Revan Lewis's  
fresh method. (x500) Great accumulation of leucocytes in ad-  
ventitia.

9.

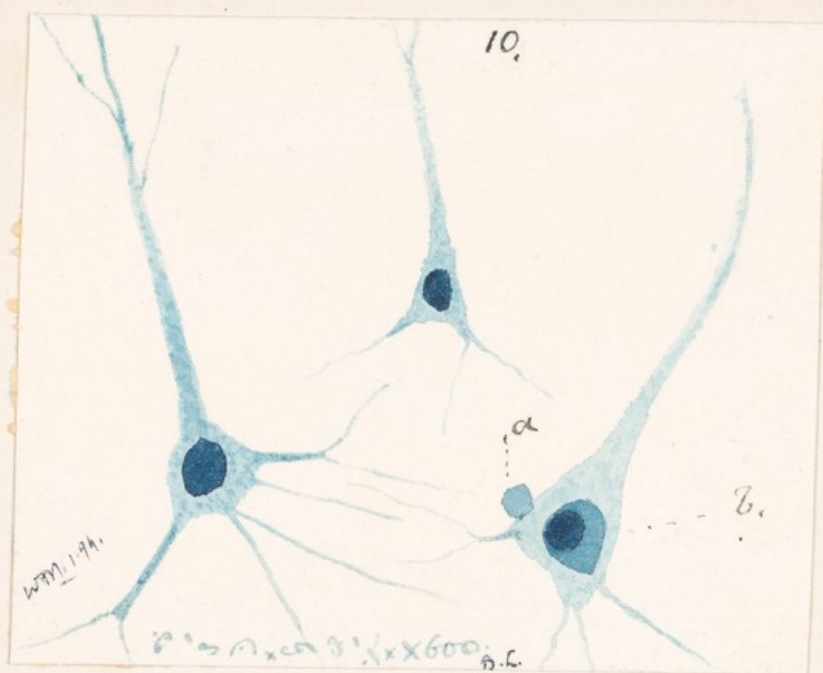


Pia  
thickened  
+ densely  
infiltrated  
with round cells.  
Dense subpial  
felling.

Outer layer  
of grey matter  
with numer-  
ous spider  
cells and  
thickened  
capillary.

Deeper layers of pia and part of first  
layer of motor cortex in a case of ad-  
vanced general paralysis of the insane,  
as seen in a section prepared by Bevan  
Lewis method. (x 500)



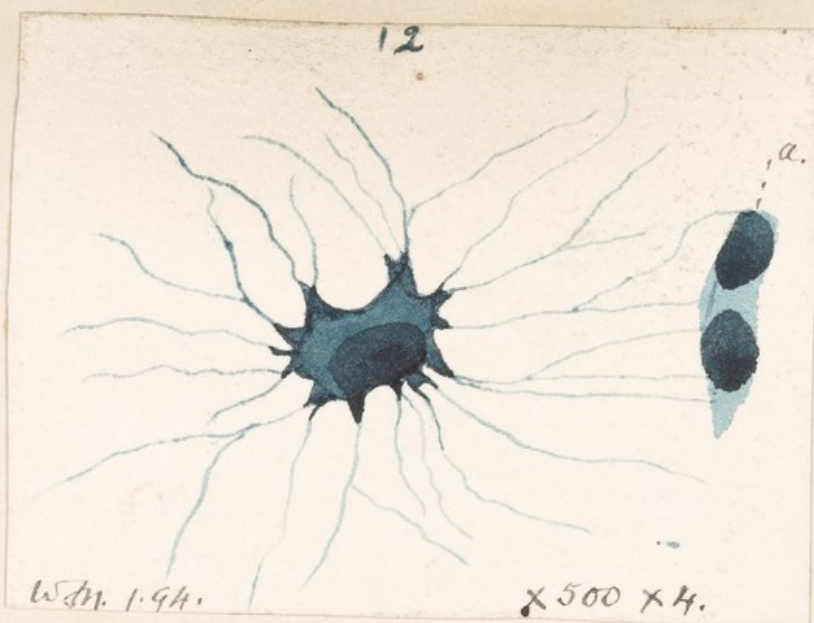


Brain of sheep. Normal. Nerve cells  
 of second layer as seen in a speci-  
 men prepared by Bevan Lewis's fresh  
 method.  $\times 600$ . Motor region.  
 a. Cereocyte. b. nucleolus recognisable in this cell only.



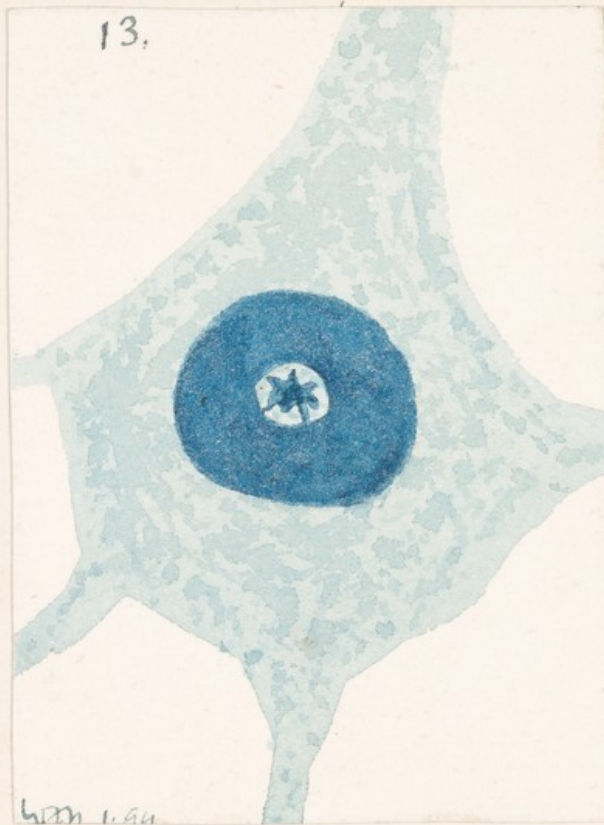
Brain of sheep. Normal. Motor nerve cells, as seen in a specimen prepared by Bevan Lewis's fresh method. X600.  
 a. ~~some~~ cells in a just outside wall of pericellular sac.





Brain of sheep. Normal. Larger cell element of the neuroglia as seen in a specimen prepared by Bevan Lewis's fresh method. a. capillary. Neuroglia cell shows nucleus, protoplasm (which should be lighter) and numerous delicate branching processes.

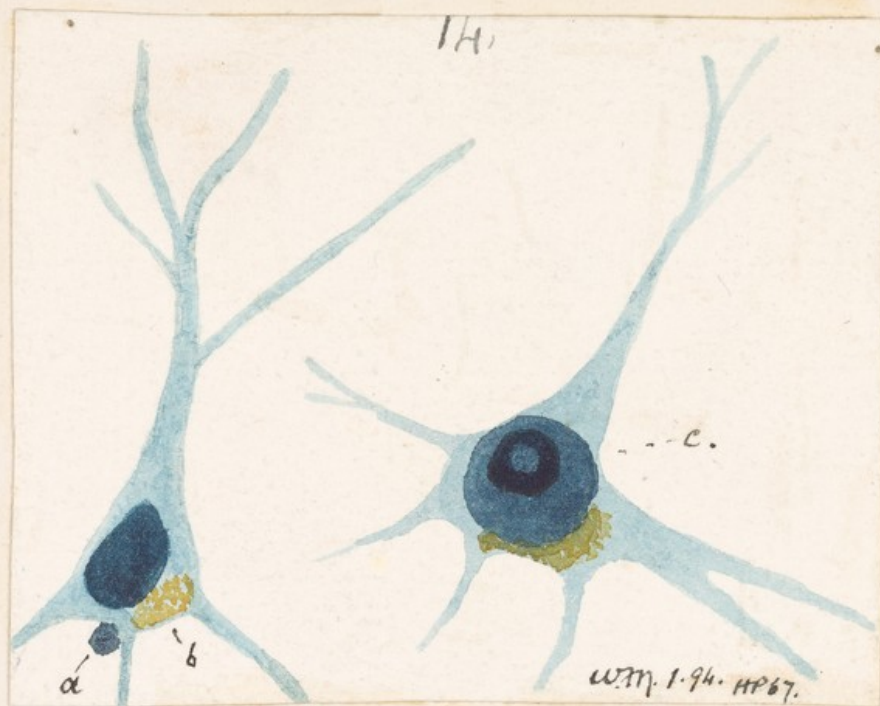
13.



Protoplasm is granular. Nucleus stains very deeply. Nucleolus stains faintly and contains a deeply stained body of irregular outline. (Endonucleolus?)

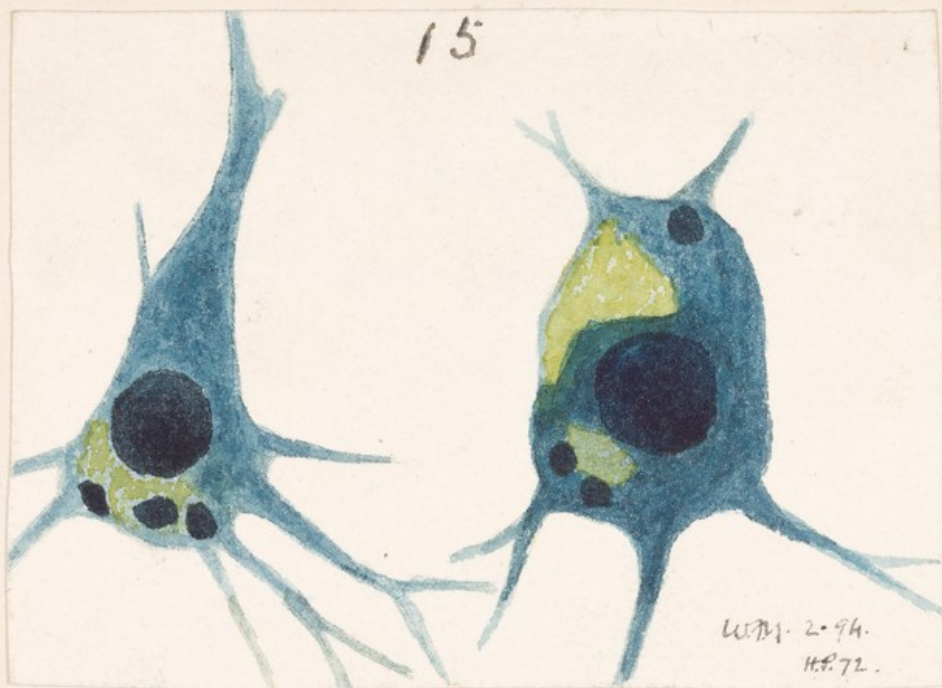
Nerve cell of second layer from brain of sheep (normal) as seen in a specimen prepared by bichromate fixation & grape sugar method and stained with aniline blue black (M.S.M.2)  $\times 500 \times 10$ .





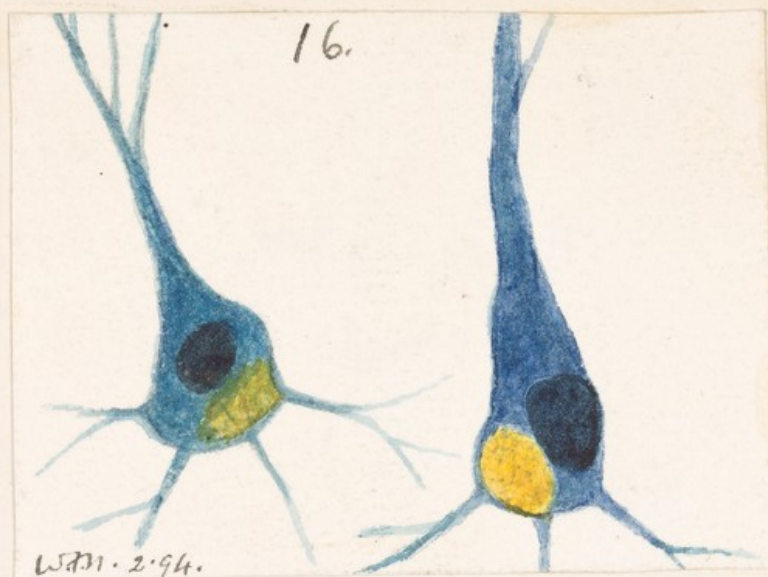
Nerve cells of normal human  
 brains. From second layer. Bevan  
 Lewis's fush method. ( $\times 600 \times 2$ )

a. Leucocyte, or nucleus of cell in wall of pericellular  
 sac? b. physiological pigment. c. Note lighter spot  
 in nucleolus (frequently seen)



Motor nerve cells showing first stage of pigmentary degeneration. From a case of senile insanity with localized softening of grey matter of cortex. Bevan Lewis's method. (X 500 x 2)





Nerve cells showing first stage of  
"pigmentary degeneration", from a case of  
 general paralysis. (H.P. 75.). Bevan Lewis's method. X600.

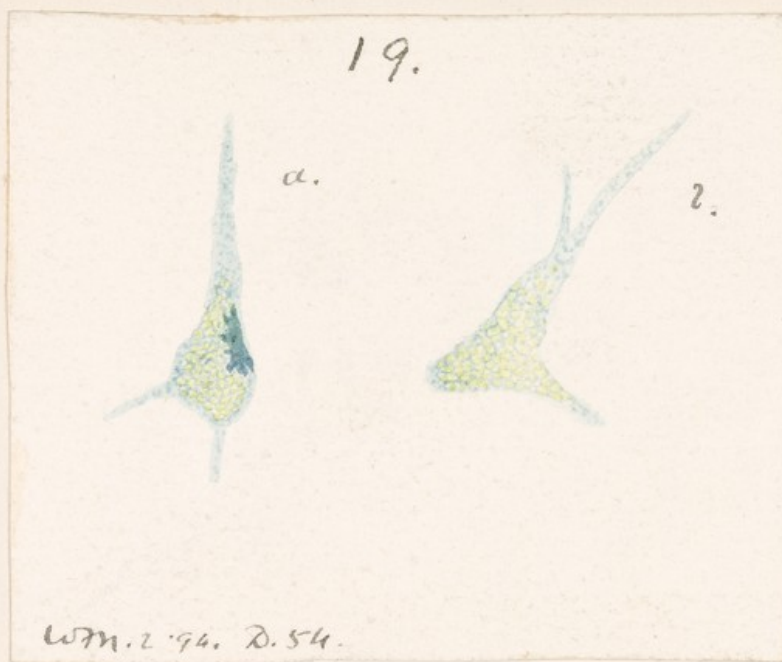
Cells swollen, protoplasm stains  
 very deeply and irregularly, pigment much  
 increased, processes still distinct.



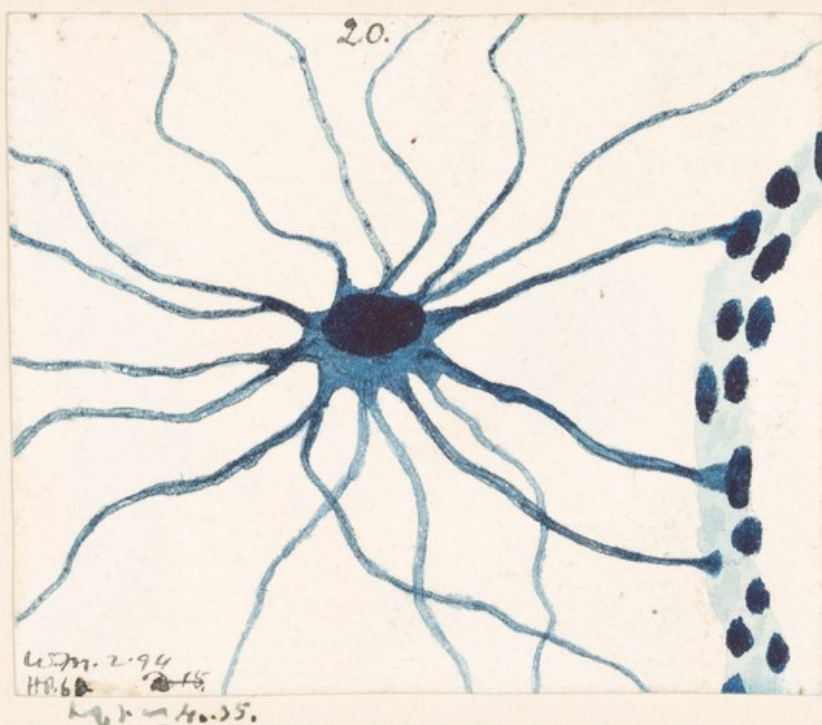
Nerve cells showing second stage of "pigmentary degeneration," from a case of general paralysis. (D.43). Bevan Lewis's Method.  $\times 600$ .

Protoplasm stains faintly, pigmented area is very large and is surrounded by a deeply stained "sclerosed swelling", processes are indistinct and many of them appear broken across.



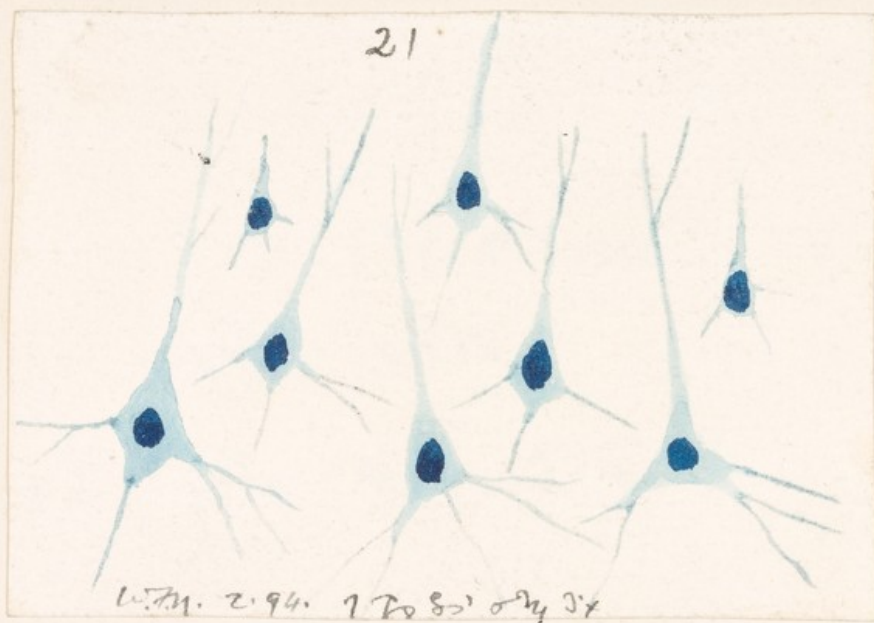


Nerve cells showing advanced granular  
degeneration from a case of alcoholic dementia.  
Bevan Lewis's method. ( $\times 500$ )

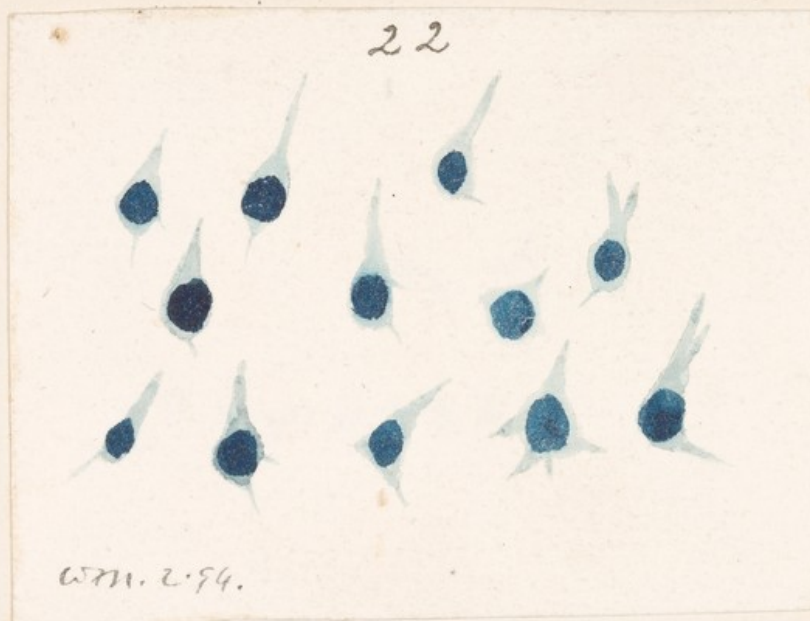


Spider cell and vessel from a case of general  
paralysis. Bevan Lewis's method ( $\times 500 \times 2$ )  
Note three different modes of connection  
with vessel. (apparent).



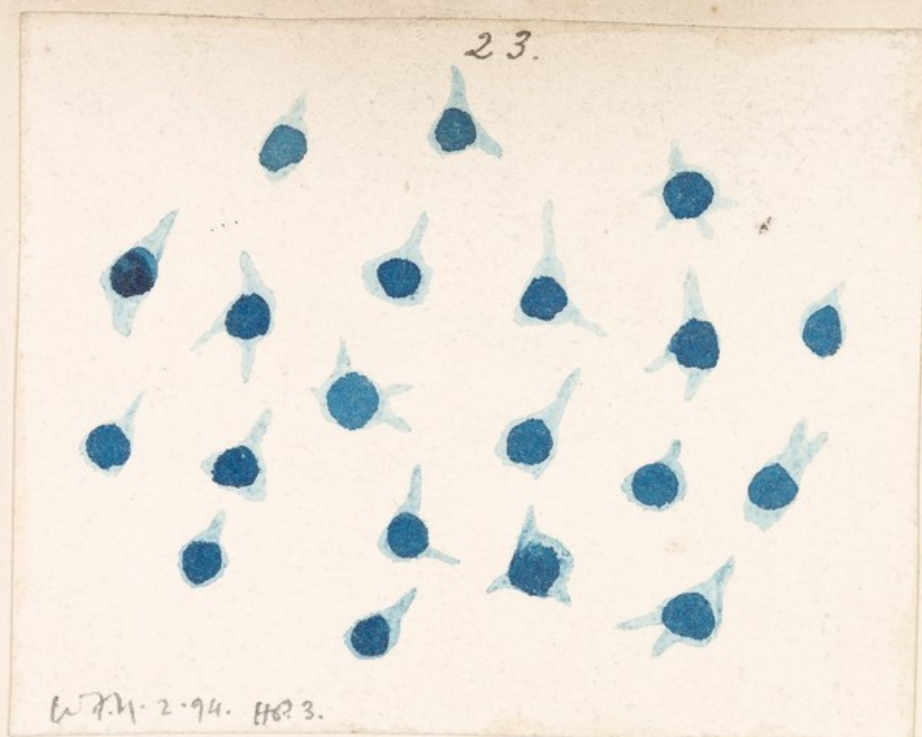


Nerve cells of normal human  
brain. ( $\times 500$ ) From third layer of motor.  
cortex. Bewan Lewis's method.



cells of cortex of foetus. Bewan Lewis's  
method. ( $\times 500 \times 1\frac{1}{2}$ )





Developmental arrest of nerve cells  
in a case of epileptic idiocy. Cells of  
third layer. ( $\times 500 \times 1\frac{1}{2}$ ). Bevan Lewis's method.

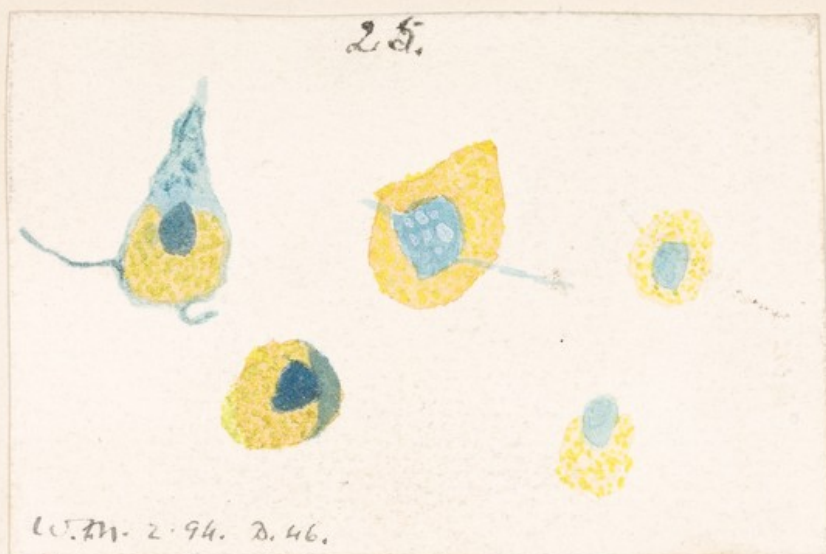


Nerve cells showing third stage of  
 "pigmentary degeneration," from a case  
 of general paralysis (D43) Lewis's method. (+600)

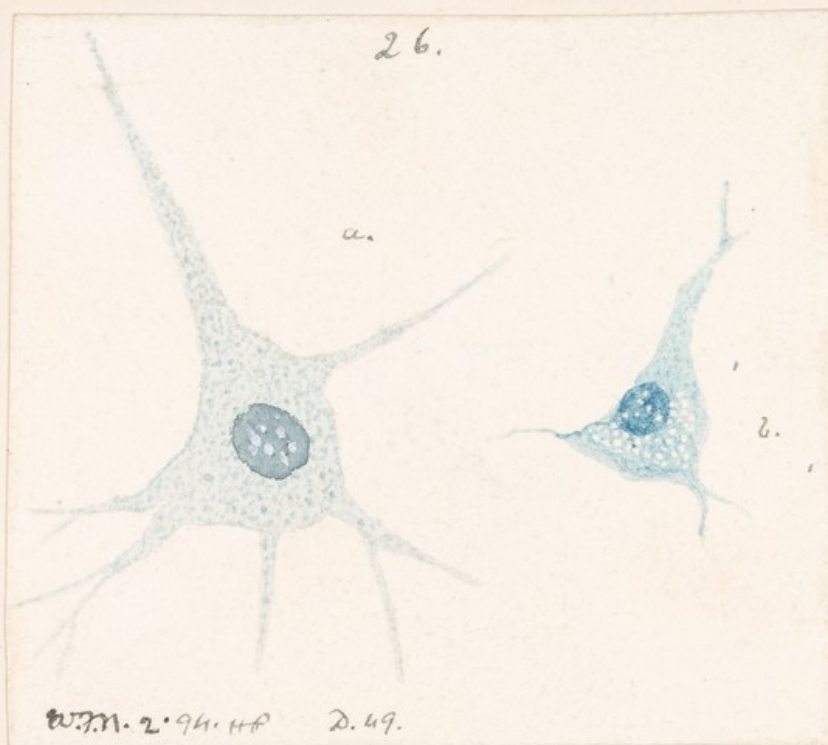
a. Nucleus has disappeared; cell is shrunken.

b. Cell is beginning to break up; most of pro-  
 cesses have gone; stains faintly; pigment excessive.





Nerve cells showing third stage of  
pigmentary degeneration. Bewan Lewis's  
method. ( $\times 500$ ) From a case of senile in-  
sanity.



*Nerve cells showing granular degeneration, from case of delusional insanity.  
Bevan Lewis's method. (x 500)*



27



W.M. 2.94.  
D. 37.

Fatty arteriole from a case of delusional  
insanity with death from phthisis.  
Bryan Lewis's method. (x 500)

28.

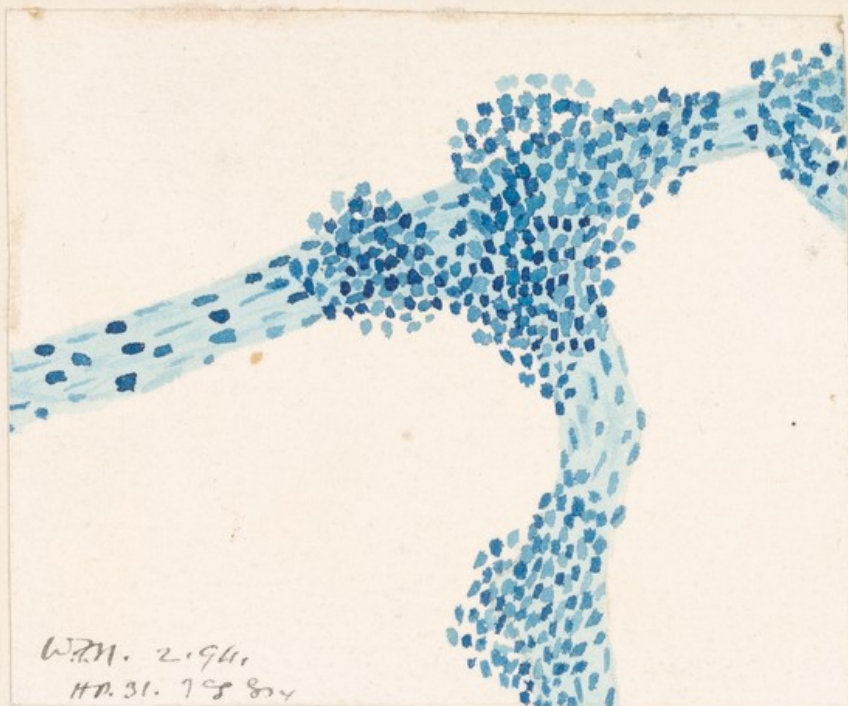


W.M. 2.94.  
20.12.

Pigmented arteriole from a case  
of general paralysis. ( $\times 300$ ) Revan Lewis's  
method.

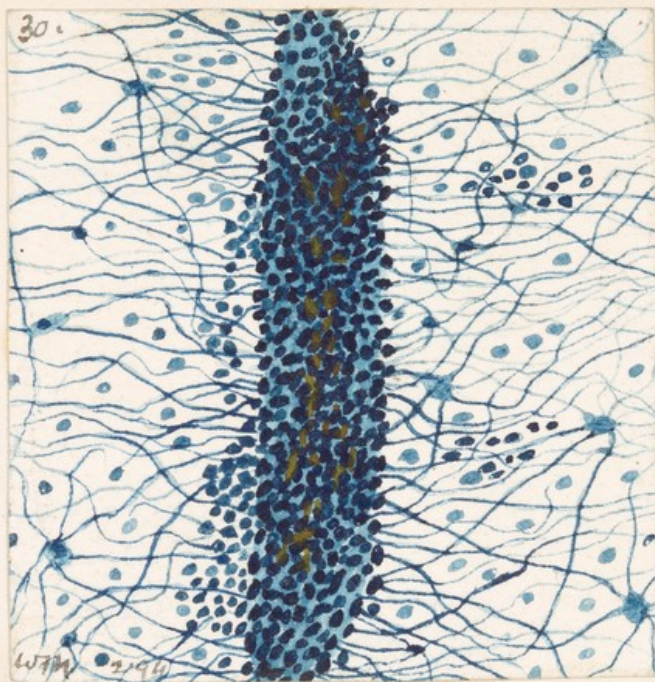


29.



W.R.H. 2.94.  
H.P. 31. 7.8.84

Arteriole from a case of alcoholic  
dementia. Bevan Lewis's method ( $\times 300$ )  
Note heaping up of round cells at places.

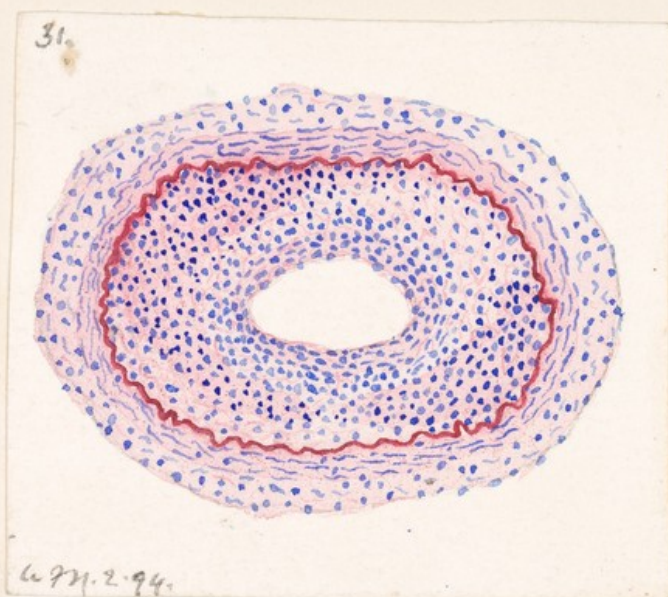


Arteriole from a case of general  
paralysis, - in grey matter of motor  
cortex. D. 44. Bwan Lewis's method. ( $\times 300$ ).

Note aggregation of round cells, blood pigment,  
attachment of very numerous processes of spider cells.

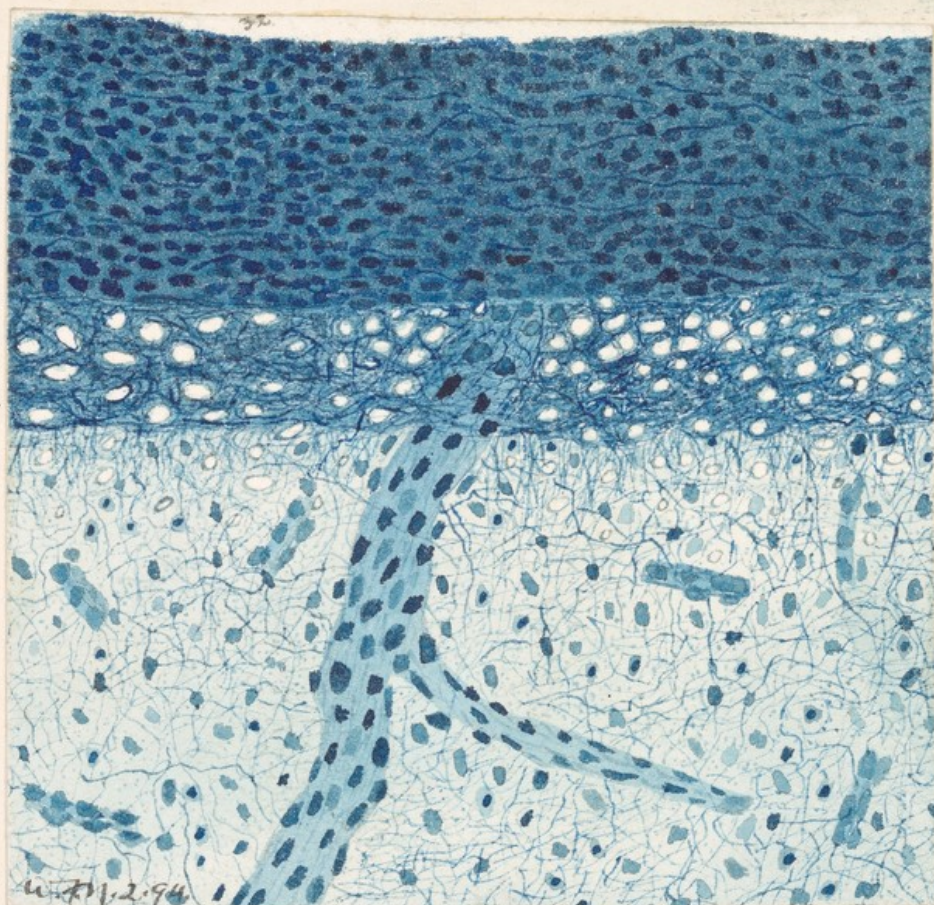


31.



Transverse section of branch of  
middle cerebral artery from a case of  
syphilitic insanity. Endarteritis obliterans.  
Bichromate fixation. Logwood & eosine. (x60)





Pia-a-  
rachnoid  
thickened  
and infiltra-  
ted with  
~~some~~ cells.

Dense sub-  
pial pelt  
with colloid  
bodies.

First layer  
showing hy-  
pertrophic  
spider cells  
(more deli-  
cate than  
commonly  
seen in  
general  
paralysis)

Thickened  
vessel and

some colloid bodies

Pia and first layer in alcoholic dementia.  
Bevan Lewis's method. ( $\times 400$ ) H.P. 31.

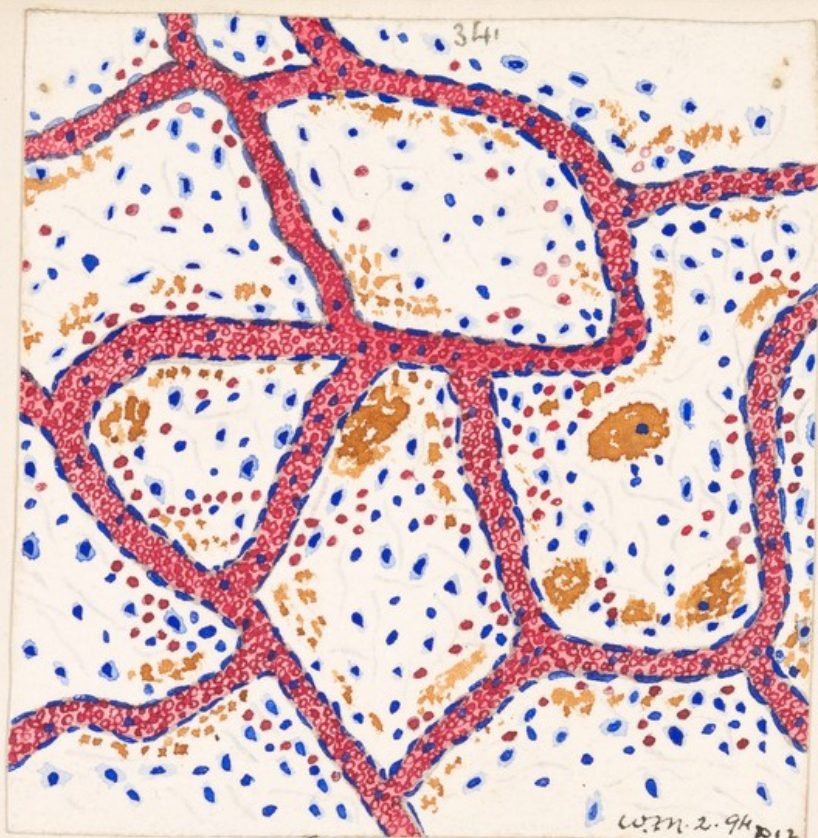
33.



Transverse section of dura and subdural membrane. From a specimen of Dr. Middlemass's. Hardened and stained with picrocarmine. ( $\times 300$ )

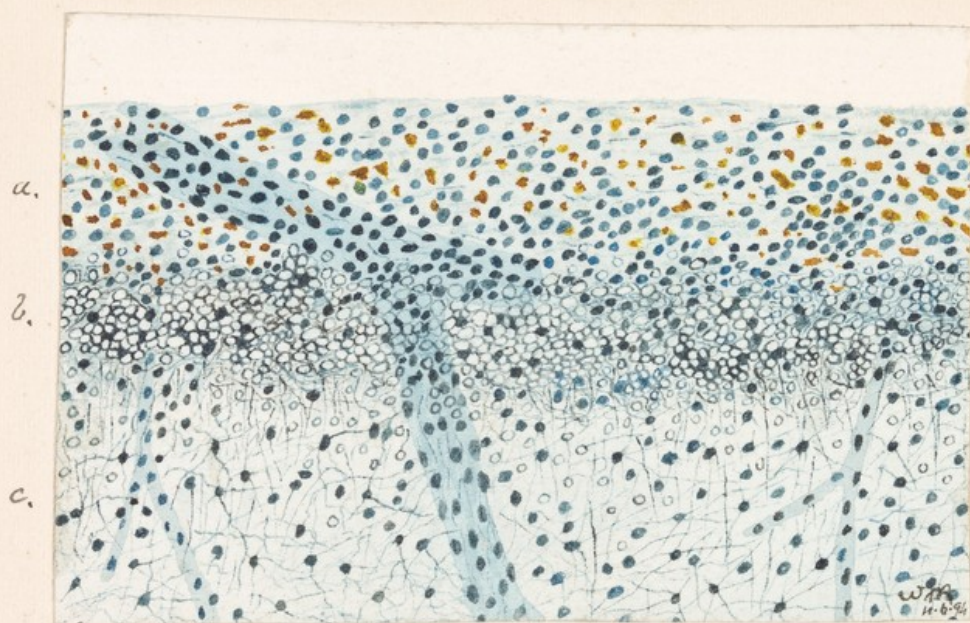
a. False membrane      b. Dura.





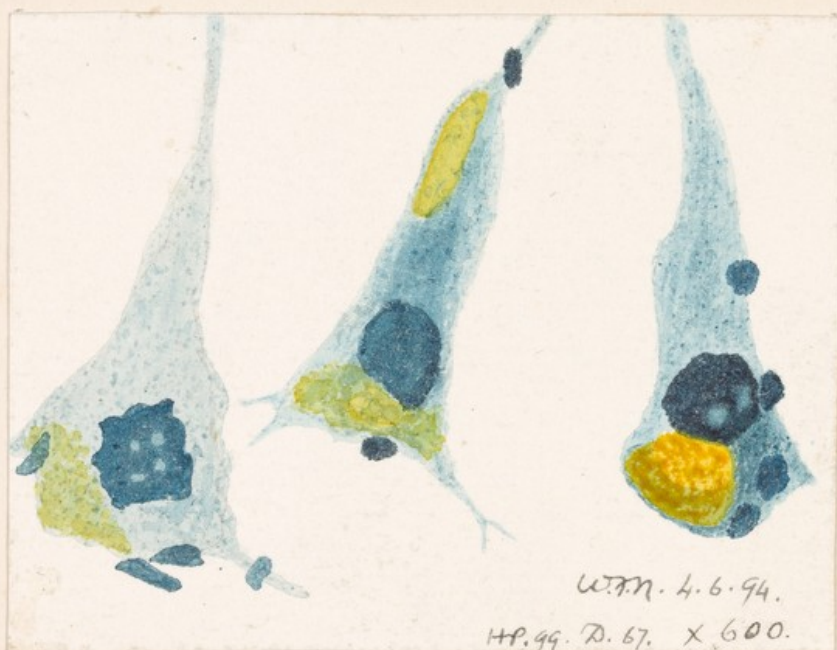
Subdural membrane from a case of  
 general paralysis  
~~chronic~~ stripped off, fixed in potassium  
 bichromate and stained with logwood & eosine (x 300)  
 Note capillaries of large calibre and with very thin  
 walls; Imperfectly developed fibrous tissue; extra-  
 vasated red and white blood corpuscles; blood pigment.





x 300.

Pia-arachnoid and first layer of cortex  
in a case of senile insanity. Fresh method.  
a. Pia-arachnoid somewhat thickened and infiltrated  
with altered blood pigment. b. Dense subpial felting,  
packed with colloid bodies. c. 1<sup>st</sup> layer showing spider cells, &c



Nerve cells of cortex in a case of senile  
melancholia. Bevan Lewis's fresh method.



Fig 27.

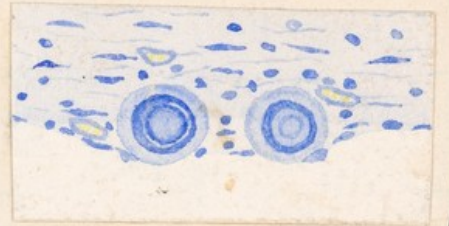


Fig 28



Fig 29

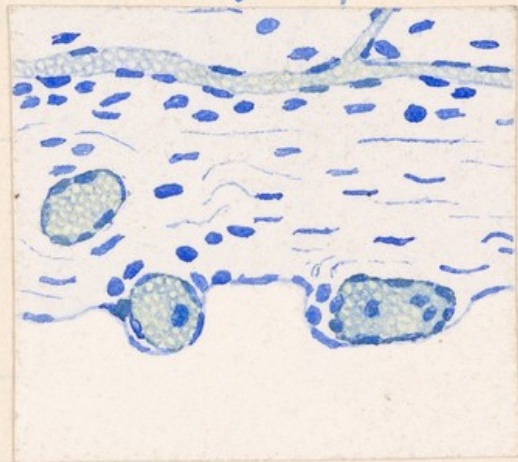


Fig 30



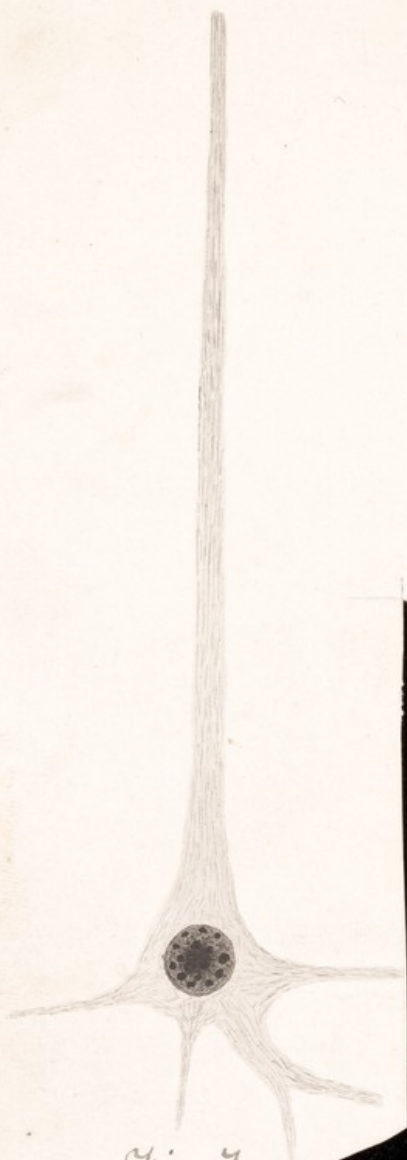


Fig. 7.



Fig. 8.

Fig. 42



Fig. 43



Fig. 44



Fig. 45.



Fig. 46



Fig. 47



Fig. 48



Fig. 49



Fig. 50



Fig. 51



Fig. 52



Fig. 53.



Fig. 54

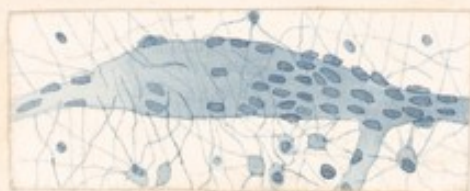


Fig. 55.





Fig. 56

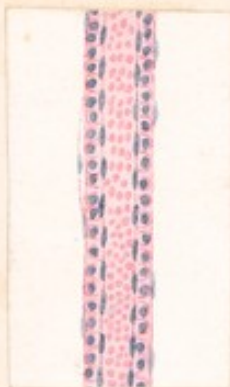


Fig. 57



Fig. 58



Fig. 59



Fig. 60



Fig. 61



Fig. 62

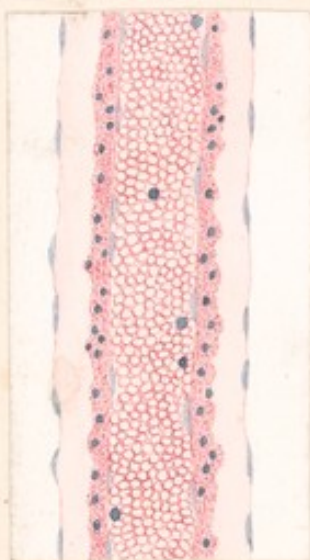


Fig. 63

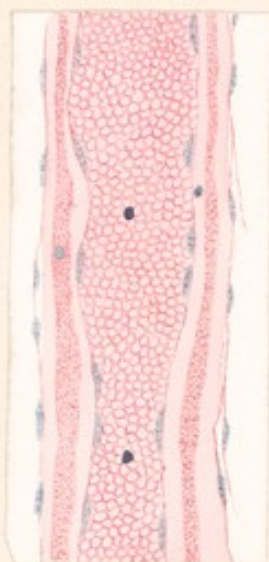


Fig. 64

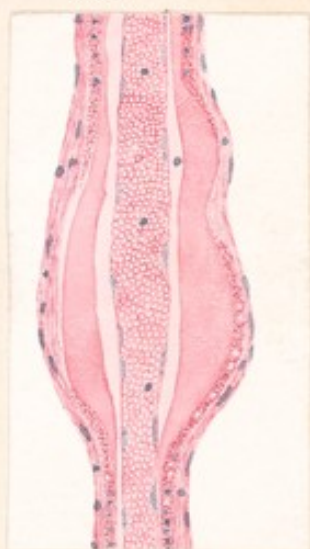
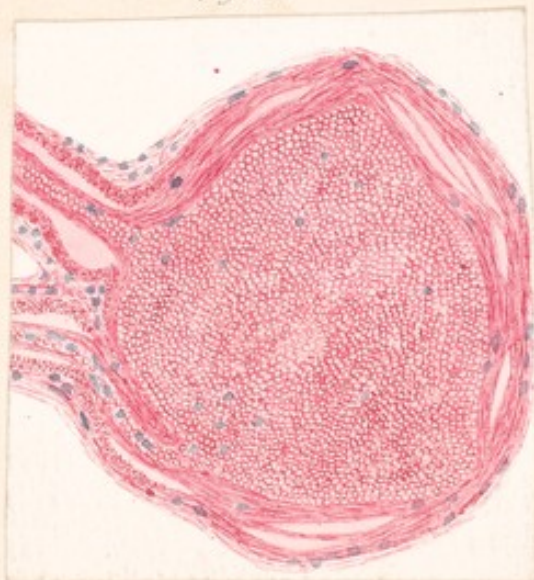


Fig. 65



Fig. 66





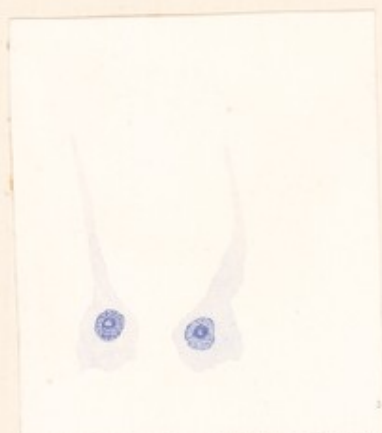
H. P. 61. General Paralysis, - advanced.



Nerve cell. B.F. - Aniline Blue Blk.  
 Protoplasm filled with clear granules.  
 Nucleus deformed.



Nerve cells. B.F. al. Carmine.  
 1. Cell is shrunken; processes have disappeared. There is some pigment at the base. Protoplasm shows some deeply stained minute granules, and also some larger pale granules. Nucleus deformed. Nucleolus eccentric, & shows clear body or vacuole.  
 2. Similar cell. Shows a faintly stained area around nucleus, deep staining at periphery (irregular), and numerous clear colourless granules.  
 3. Similar to 1 & 2.



Pyramidal nerve cells of occipital cortex of healthy sheep. Fixed with Methyls haematoxy. Sheep. 12.6.94. X36

Journal of Natural Science  
October 1888



To illustrate Article by Dr. Fred Robertson & Dr. J. R. ...





Descriptive

Plate XIV



Fig. 1

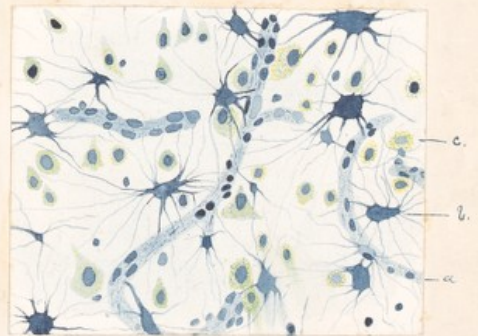


Fig. 2.

Description

Plate XV



Fig. 1



Fig. 2



Fig. 3

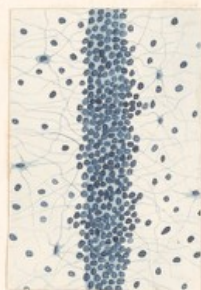


Fig. 4

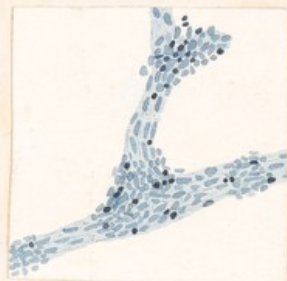


Fig. 5

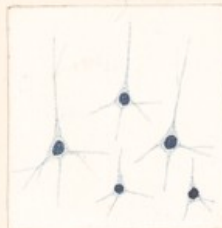


Fig. 6



Fig. 7



Fig. 8

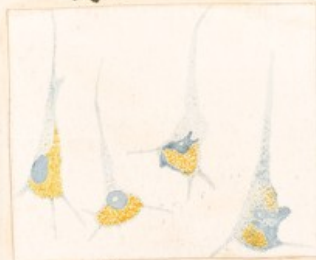


Fig. 9

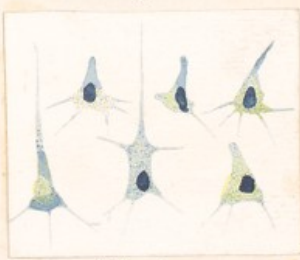
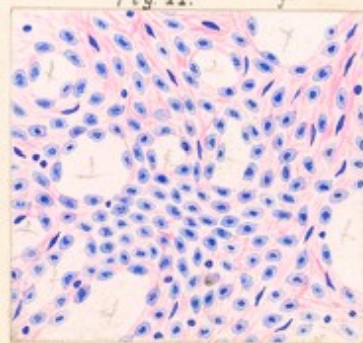
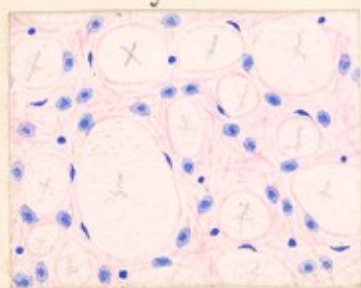
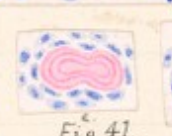
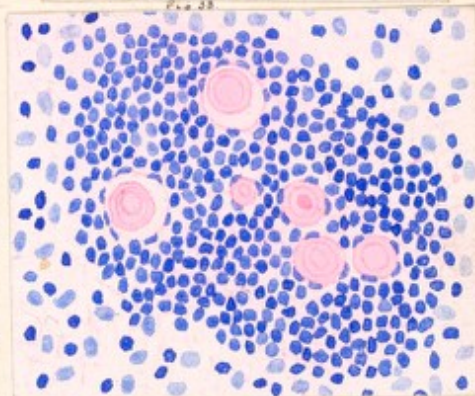
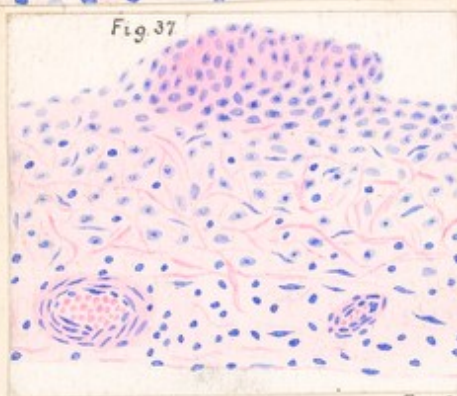
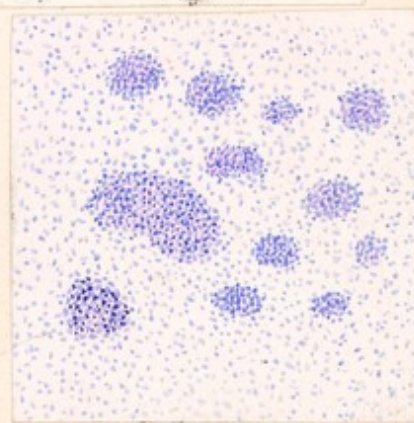
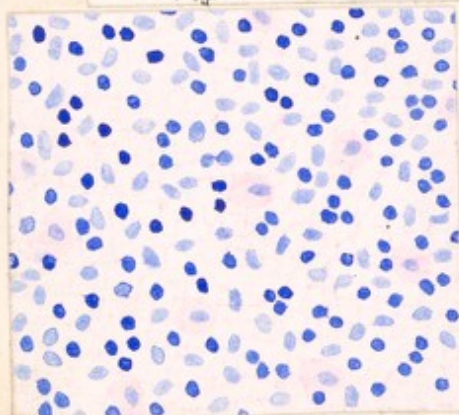
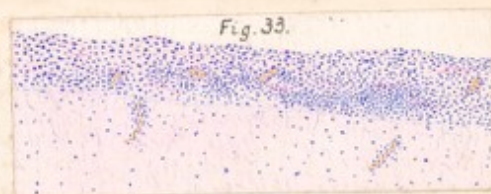
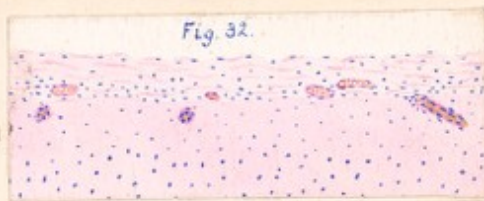


Fig. 10





These need  
not be taken  
place  
Mabel  
only

all  
white

white



PLATE XV.

Fig. 1. Normal capillaries of human cerebral cortex. Bevan Lewis's fresh method.  $\times 500$ .

Fig. 2. Capillaries of cerebral cortex from a case of advanced general paralysis, showing marked thickening and granularity, and increase in number of nuclei. Bevan Lewis's fresh method.  $\times 500$ .

Fig. 3. Normal arteriole of human cerebral cortex. Bevan Lewis's fresh method.  $\times 300$ .

Fig. 4. Cerebral arteriole from a case of advanced general paralysis, showing dense aggregation of round cells upon its walls, and the processes of hypertrophied spider cells attached to it. Bevan Lewis's fresh method.  $\times 300$ .

Fig. 5. Cerebral arteriole from a case of alcoholic insanity, showing general fibrous thickening and localised cellular aggregations. Bevan Lewis's fresh method.  $\times 300$ .

Fig. 6. Normal small pyramidal nerve cells of third layer of cerebral cortex of child. Bevan Lewis's fresh method.  $\times 500$ .

Fig. 7. Nerve cells of cerebral cortex of full-time foetus. Bevan Lewis's fresh method.  $\times 500$ .

Fig. 8. Nerve cells of third layer of cerebral cortex, from a case of epileptic idiocy. [Patient aged 24.] Bevan Lewis's fresh method.  $\times 500$ . The nerve cells closely resemble those of the foetus, the only difference being that they show a degree of granular change in their protoplasm. A comparison of these two specimens (7 and 8) is most instructive as showing one stage in normal brain cell development in Fig. 7, and morbidly arrested development in Fig. 8; each corresponding to the respective mental developments of the individuals from whose brains they were taken.

Fig. 9. Large pyramidal nerve cells of frontal cortex, from a case of senile insanity in a patient aged 85. Bevan Lewis's fresh method.  $\times 500$ . They show advanced pigmentary degeneration, with loss of many of their processes.

Fig. 10. Large pyramidal nerve cells of frontal cortex, from a case of secondary dementia. Patient had an attack of mania at the age of 21, which was not recovered from. He died at the age of 32, from phthisis. Bevan Lewis's fresh method.  $\times 500$ . The nerve cells show marked granular change in their protoplasm, and many of their processes, more especially the apical, are stunted.

PLATE XV.

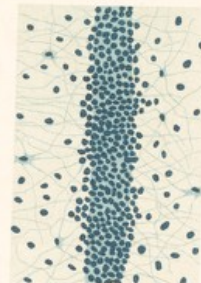
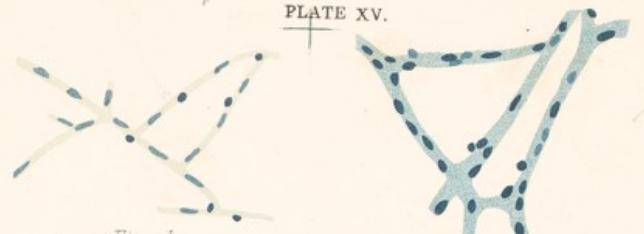


Fig. 3.

Fig. 4.

Fig. 5.



Fig. 6.

Fig. 7.

Fig. 8.

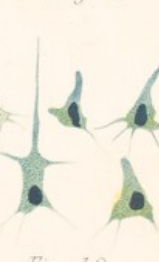
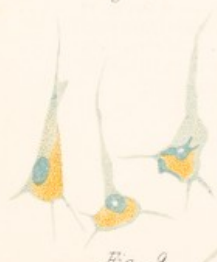


Fig. 9.

Fig. 10.



Note for lithographer.



Fig. 42. Ground 1; Nuclei 2.

Fig. 43. do. do.

Fig. 44. Ground 1; Elongated nuclei 2; Round nuclei 3.

Fig. 45. Ground 1. Nuclei 3. Lines at sides 1. Note spots of yellow pigment, - No. 6.

Fig. 46. Ground 2. Nuclei 3.

Fig. 47. Ground 1. Nuclei and strands 2.

Fig. 48. Ground 1. Nuclei 3. Pigment 7.

Fig. 49. Ground 1. Strands 2. Nuclei 3. Yellow pigment 6.

Fig. 50. Ground 1. Nuclei 2. Yellow pigment 6.

Fig. 51. Ground 1. Oval nuclei 2. Round nuclei 3. Yellow pigment 6.

Fig. 52. No colour for ground. Circles representing blood corpuscles in vessel, 1. Protoplasm of cells, 1. Vessel walls 2. Nuclei 3. Yellow pigment No 7.

Fig. 53. Ground 1. Some of nuclei and granules 2. Other nuclei 3.

Fig. 54. Ground to be homogeneous and not granular - No 2, shading off into No 1 if possible. Lines, and protoplasm of cells not on vessel No 2. Nuclei of cells not on vessel, and nuclei on vessel, No 3.

Fig. 55. Ground 1. Nuclei 2. Dark rod, 3.  
~~Fig. 55~~ Ground of two expanded portions to be quite homogeneous.

Fig. 56. Ground 4. 5 and 3.

Fig. 57. 4-5- and 3.

Fig. 58. 4-5- and 2

Fig. 59. 4 and 5. For nuclei beyond vessel, 2, for nuclei in vessel wall, 3.

Fig. 60. 4-5 and 3.

Fig. 61. 4, 5 and 2.

Fig. 62. 4 and 5. For rounded nuclei No 3. For

external elongated nuclei No 2. For elongated nuclei next red corpuscles No 1, with granules of No 2. The pale red band should be perfectly homogeneous.

Fig. 63. Same as Fig 62.

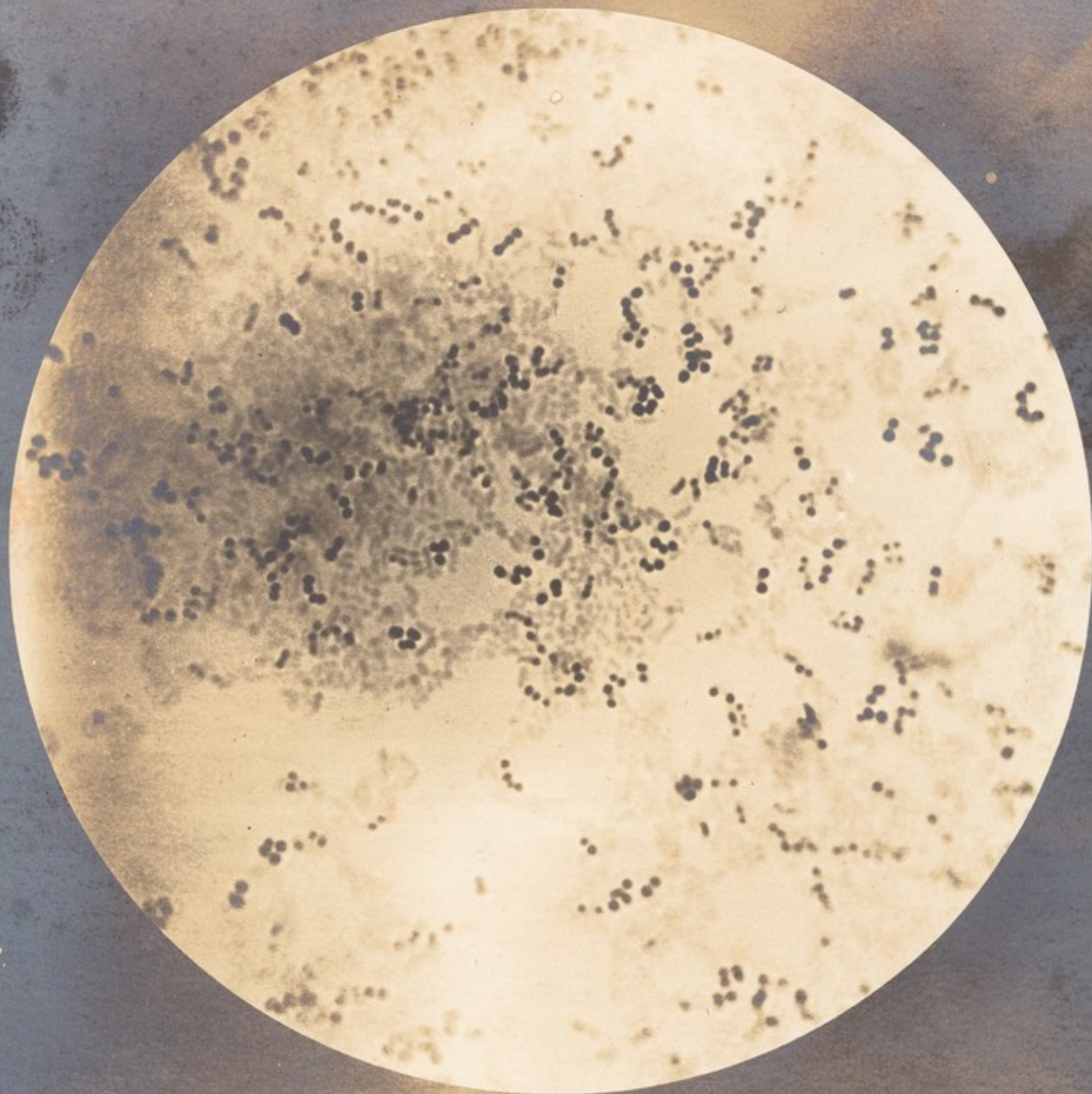
Fig. 64. 4 and 5. Elongated nuclei next red corpuscles No 1 with granules of No 2. Other nuclei No 3. Red is neither dotted nor in lines to be homogeneous and not granular.

Fig. 65. Same as Fig. 64

Fig. 66. Same as Fig. 64, but all nuclei No 3.



80001 x 10000  
X 10000  
10000 x 10000  
80001 x 10000



R.M.





Plate XVI.  
Fig. 2.





Section of miliary aneurism in  
 pia-arachnoid from a case of senile  
 insanity. Hematox. & eos. (x 50).

Miliary aneurisms are found  
 with some frequency in cases of senile  
 insanity.