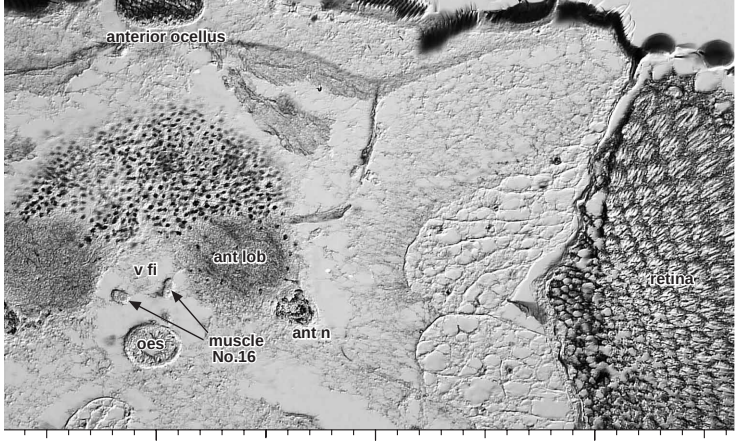
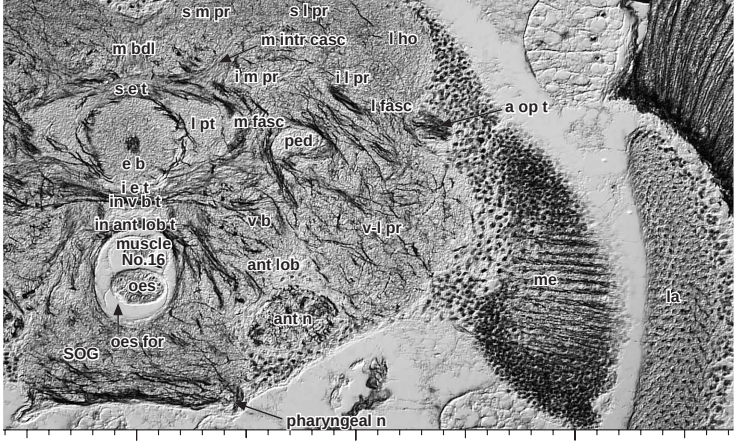
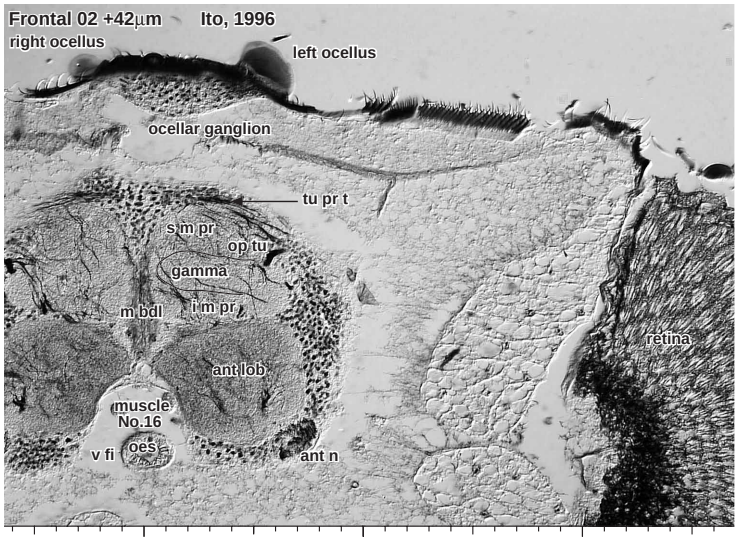
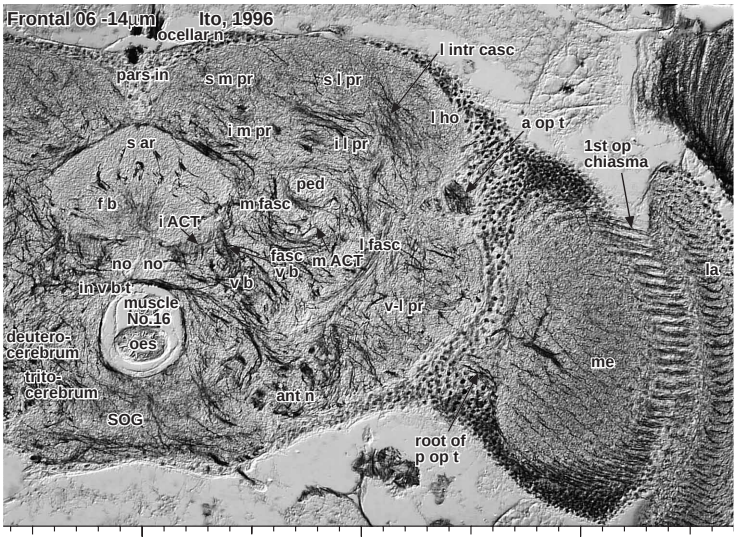
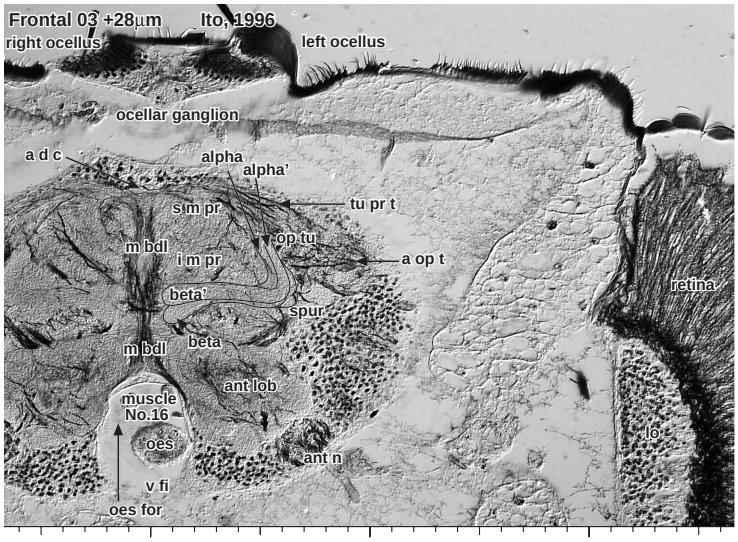
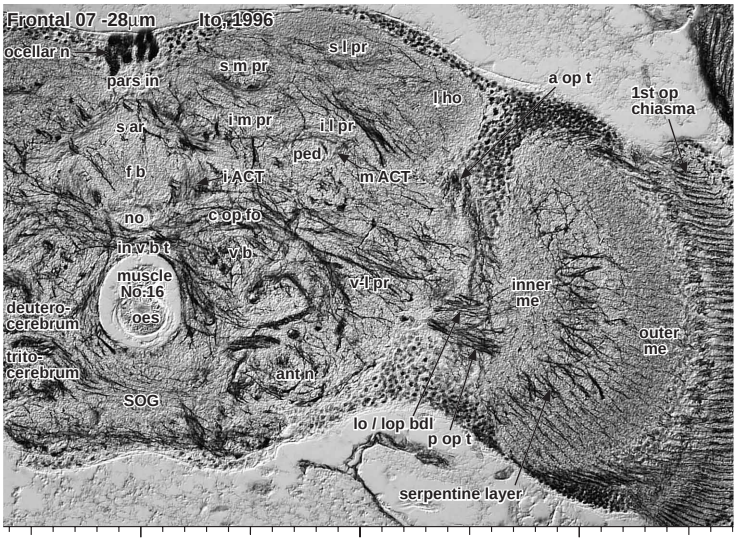

anterior ocellus
ant lob
v fi
retina
muscle
No.16
ant n
oes

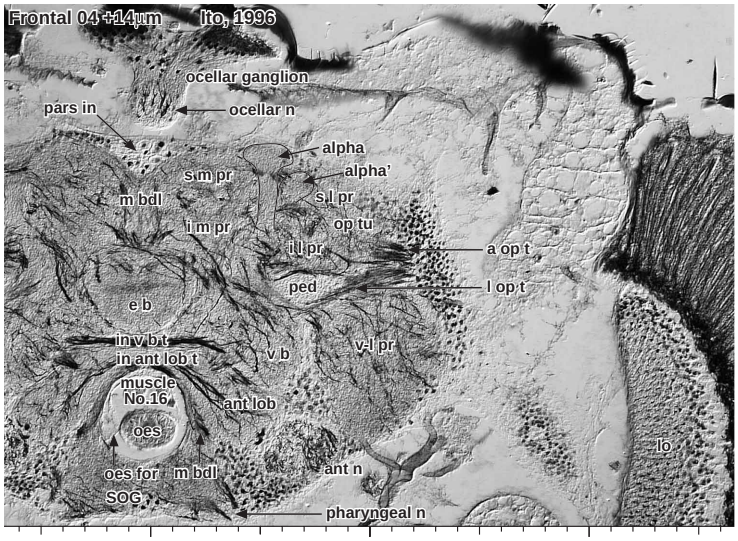

s m pr
s l pr
m bdl
m intr casc
l ho
i m pr
i l pr
s e t
l fasc
a op t
l pt
m fasc
ped
e b
i e t
in v b t
in ant lob t
v b
v-l pr
muscle
No.16
ant lob
oes
me
la
ant n
oes for
SOG
pharyngeal n

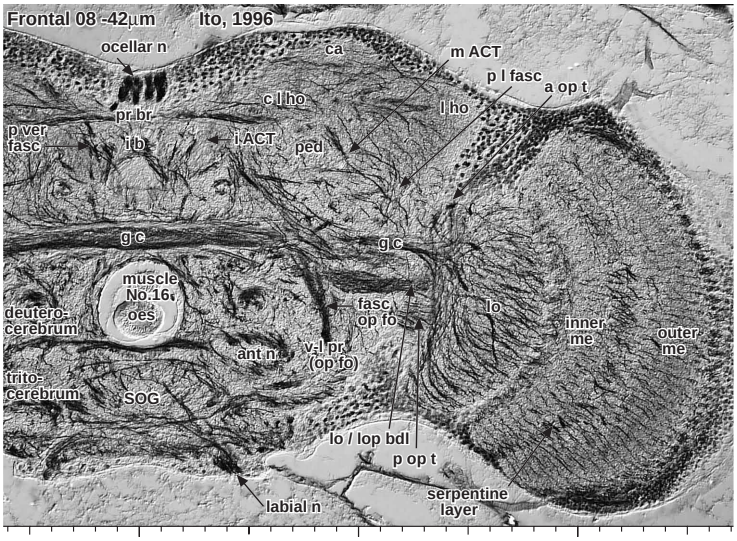

Frontal 02 +42µm Ito, 1996
right ocellus
left ocellus
ocellar ganglion
tu pr t
s m pr
op tu
gamma
m bdl
i m pr
retina
ant lob
muscle
No.16
v fi
oes
ant n

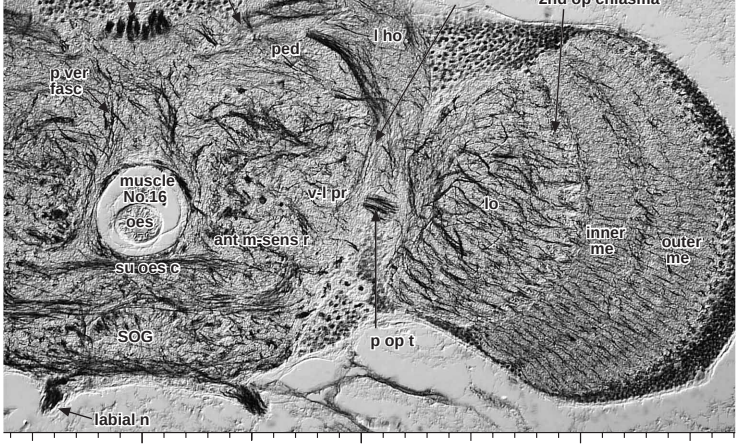

Frontal 06 -14µm Ito, 1996
ocellar n
l intr casc
pars in
s m pr
s l pr
l ho
a op t
i m pr
i l pr
s ar
1st op
chiasma
ped
f b
m fasc
i ACT
l fasc
fasc
m ACT
no
no
v b
in v b t
la
muscle
No.16
v-l pr
deutero-
cerebrum
oes
me
trito-
cerebrum
ant n
SOG
root of
p op t

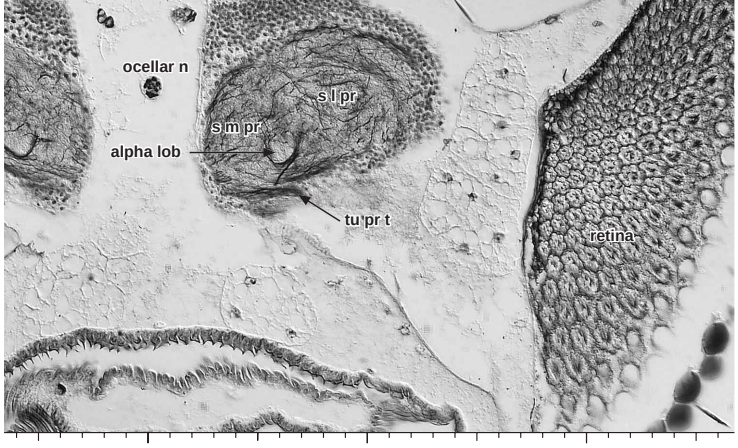

Frontal 03 +28µm Ito, 1996
right ocellus
left ocellus
ocellar ganglion
a d c
alpha
alpha'
s m pr
tu pr t
op tu
m bdl
i m pr
a op t
retina
beta'
spur
beta
m bdl
ant lob
muscle
No.16
oes
ant n
lo
v fi
oes for

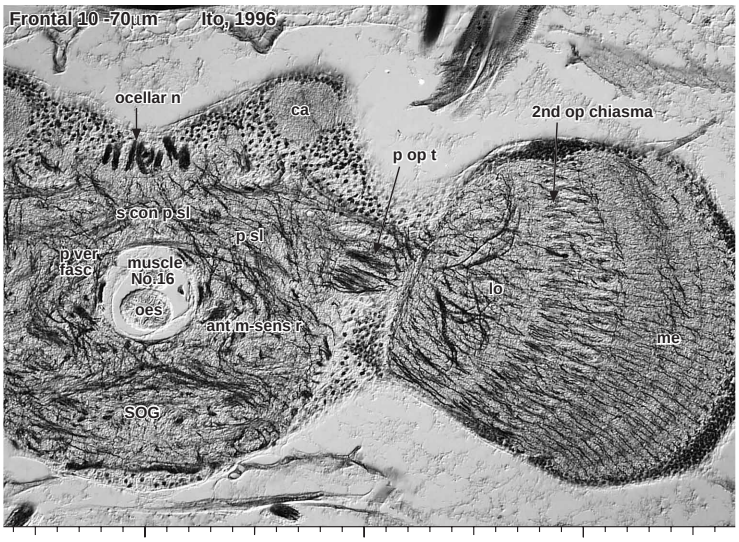

Frontal 07 -28µm Ito, 1996
ocellar n
s l pr
s m pr
pars in
a op t
l ho
1st op
chiasma
i m pr
i l pr
s ar
ped
f b
i ACT
m ACT
no
c op fo
in v b t
v b
muscle
No.16
v-l pr
inner
me
deutero-
cerebrum
oes
outer
me
trito-
cerebrum
ant n
SOG
lo / lop bdl
p op t
serpentine layer

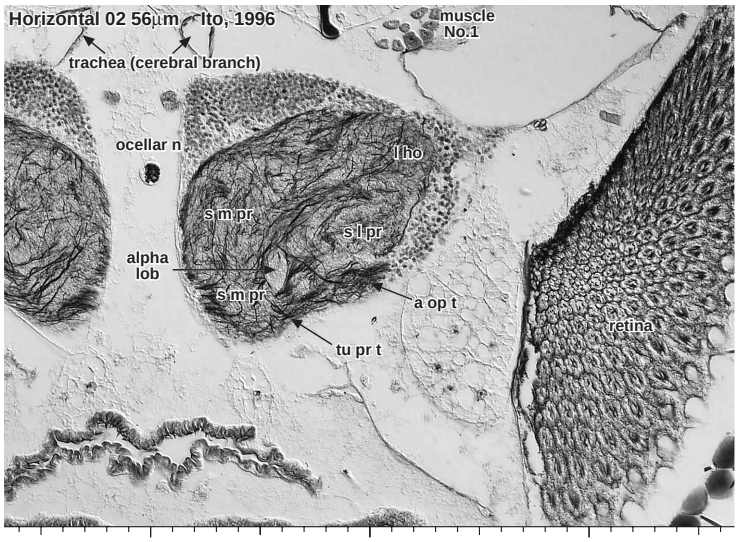

Frontal 04 +14µm Ito, 1996
ocellar ganglion
pars in
ocellar n
alpha
alpha'
s m pr
m bdl
s l pr
i m pr
op tu
i l pr
a op t
ped
l op t
e b
in v b t
v-l pr
v b
in ant lob t
muscle
No.16
ant lob
oes
lo
oes for
m bdl
ant n
SOG
pharyngeal n

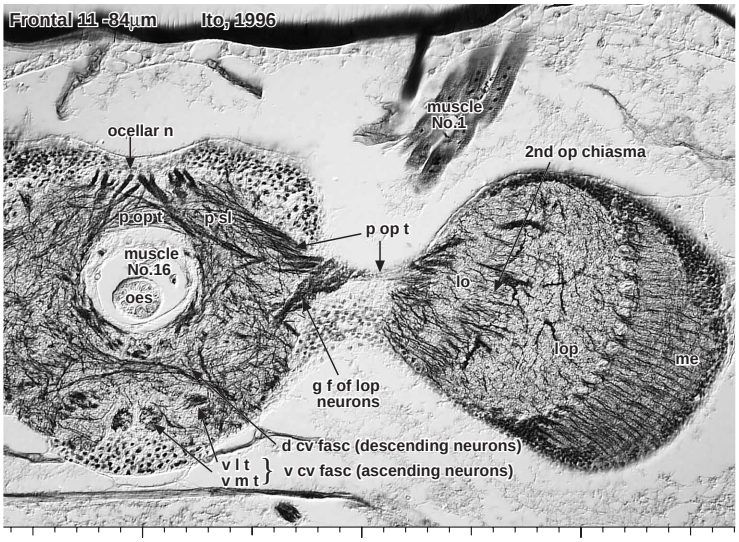

Frontal 08 -42µm Ito, 1996
ocellar n
ca
m ACT
p l fasc
a op t
c l ho
l ho
pr br
p ver
fasc
i b
i ACT
ped
g c
g c
muscle
No.16
oes
deutero-
cerebrum
fasc
op fo
lo
inner
me
outer
me
ant n
v-l pr
(op fo)
trito-
cerebrum
SOG
lo / lop bdl
p op t
labial n
serpentine
layer

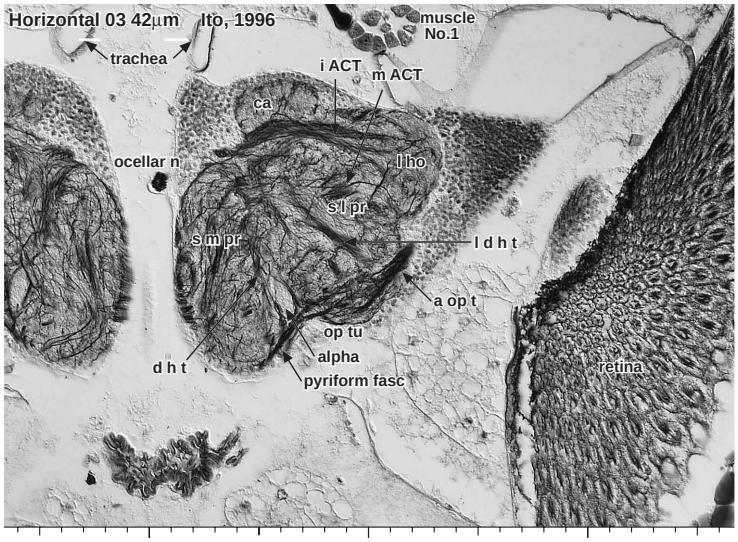

2nd op chiasma
l ho
ped
p ver fasc
muscle No.16
oes
v-l pr
lo
ant m-sens r
inner me
outer me
su oes c
SOG
p op t
labial n

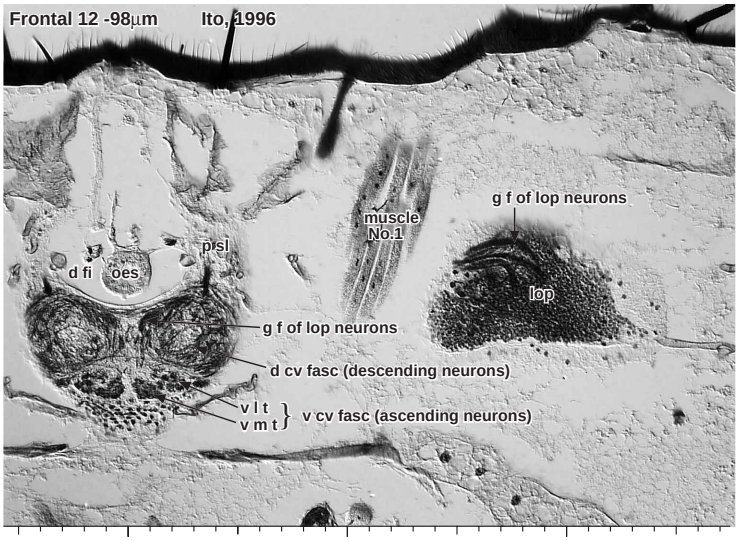

ocellar n
s l pr
s m pr
alpha lob
tu pr t
retina

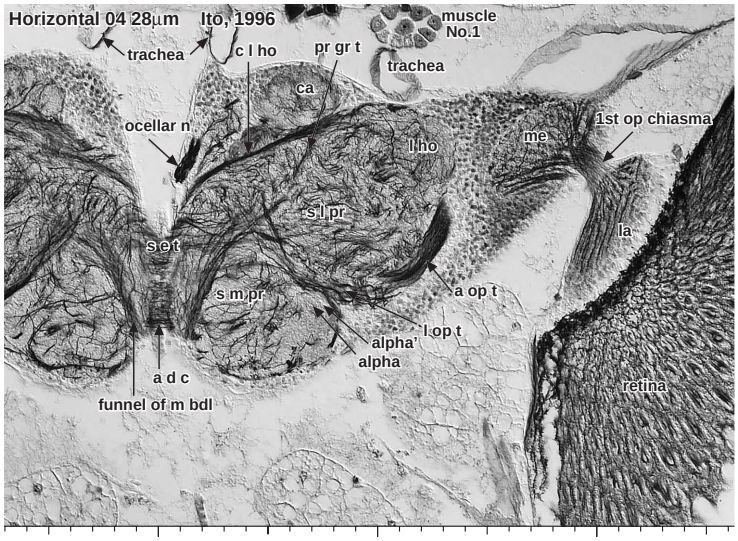

Frontal 10 -70µm Ito, 1996
ocellar n
ca
2nd op chiasma
p op t
s con p sl
p sl
p ver fasc
muscle No.16
oes
ant m-sens r
lo
me
SOG

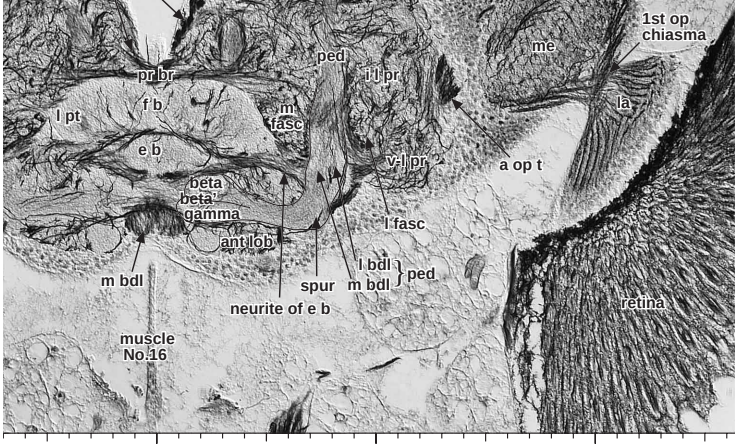

Horizontal 02 56µm Ito, 1996
muscle No.1
trachea (cerebral branch)
ocellar n
l ho
s m pr
s l pr
alpha lob
a op t
tu pr t
retina

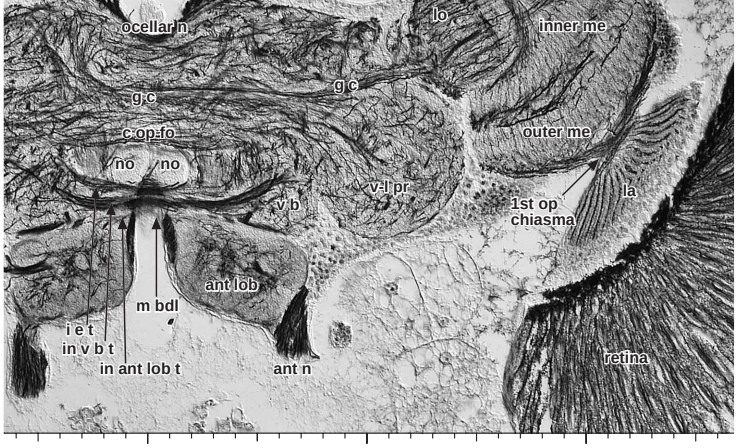

Frontal 11 -84µm Ito, 1996
muscle No.1
ocellar n
2nd op chiasma
p op t
p sl
muscle No.16
oes
lo
lop
me
g f of lop neurons
d cv fasc (descending neurons)
v l t
v m t
v cv fasc (ascending neurons)

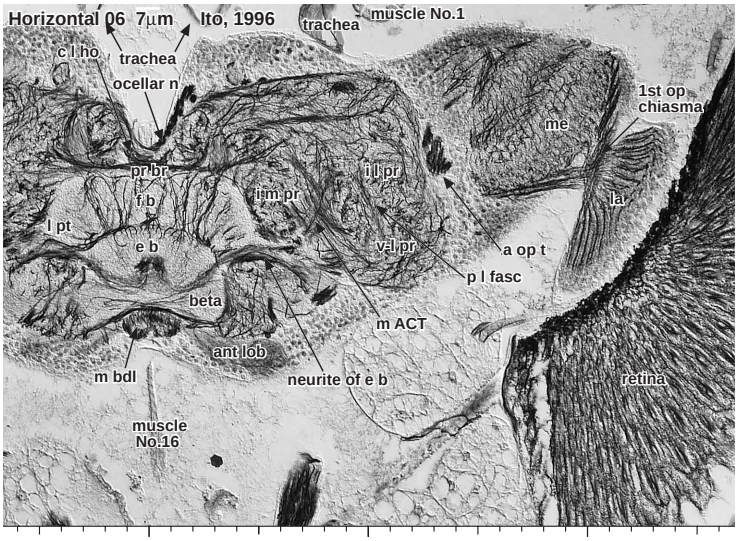

Horizontal 03 42µm Ito, 1996
muscle No.1
trachea
i ACT
m ACT
ca
ocellar n
l ho
s l pr
s m pr
l d h t
a op t
op tu
alpha
pyriform fasc
d h t
retina

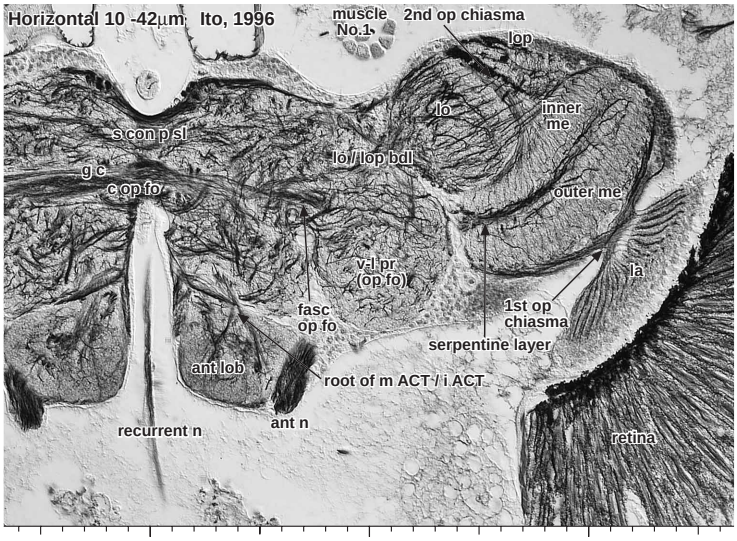

Frontal 12 -98µm Ito, 1996
g f of lop neurons
muscle No.1
p sl
d fi
oes
lop
g f of lop neurons
d cv fasc (descending neurons)
v l t
v m t
v cv fasc (ascending neurons)

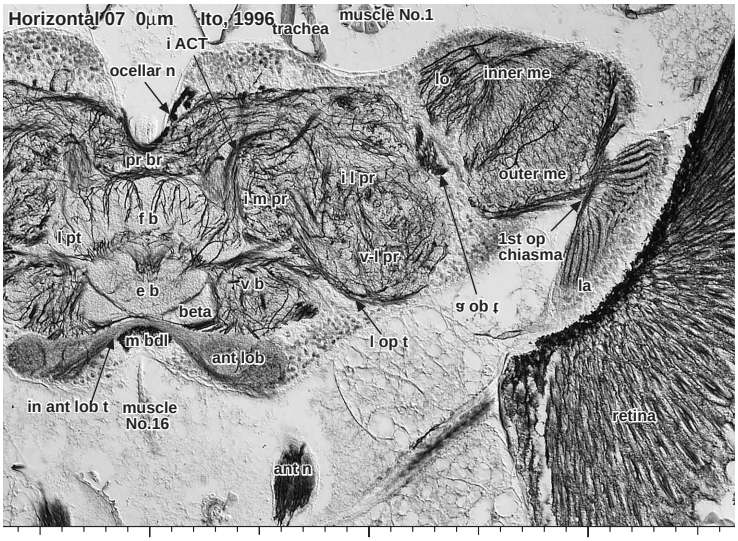

Horizontal 04 28µm Ito, 1996
muscle No.1
trachea
c l ho
pr gr t
trachea
ca
ocellar n
1st op chiasma
me
l ho
s l pr
la
s e t
a op t
s m pr
l op t
alpha'
alpha
a d c
funnel of m bdl
retina

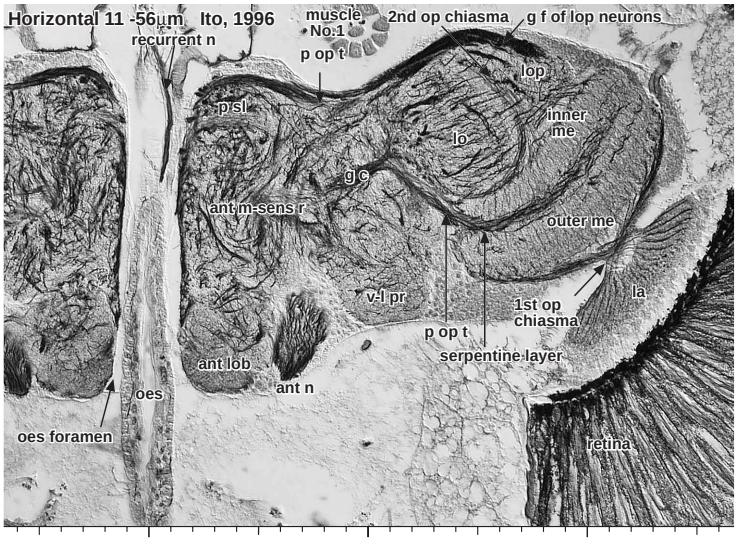

1st op chiasma
me
ped
i l pr
pr br
f b
m fasc
l pt
e b
v-l pr
a op t
beta
beta
gamma
l fasc
ant lob
l bdl
ped
m bdl
spur
m bdl
neurite of e b
retina
muscle No.16

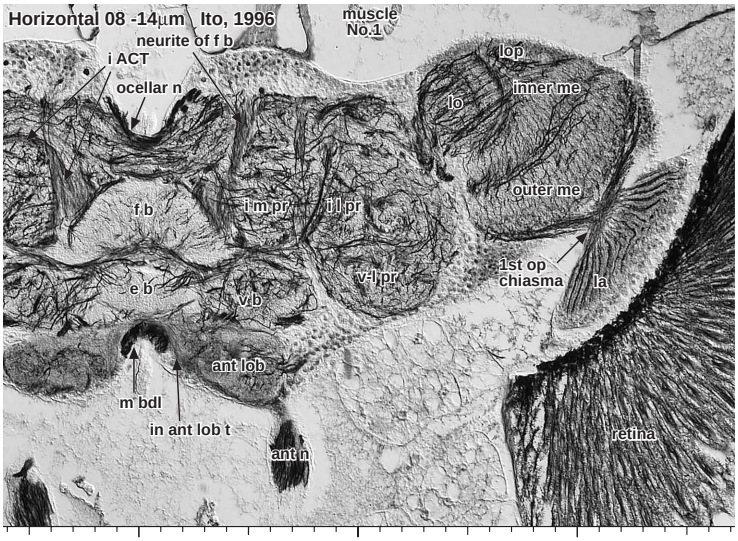

ocellar n
lo
inner me
g c
g c
c op fo
outer me
no
no
v-l pr
la
v b
1st op chiasma
ant lob
m bdl
i e t
in v b t
in ant lob t
ant n
retina

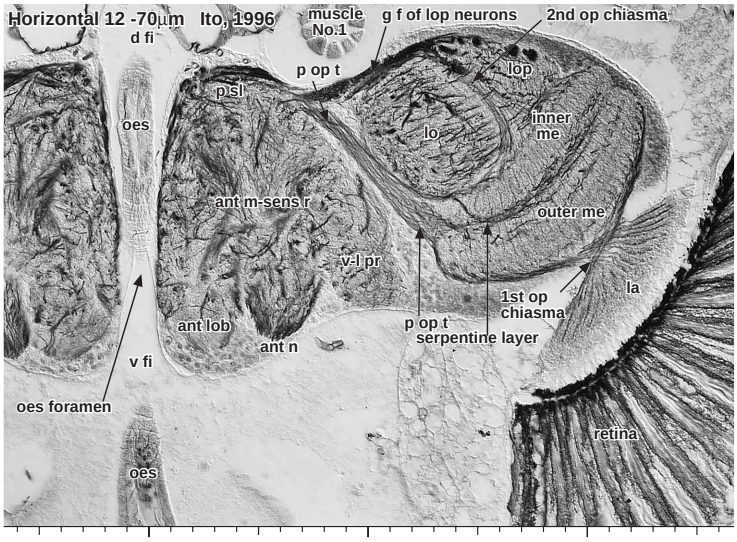

Horizontal 06 7μm Ito, 1996
trachea
muscle No.1
c l ho
trachea
ocellar n
1st op chiasma
me
pr br
i l pr
i m pr
f b
la
l pt
e b
v-l pr
a op t
p l fasc
beta
m ACT
ant lob
m bdl
neurite of e b
retina
muscle No.16

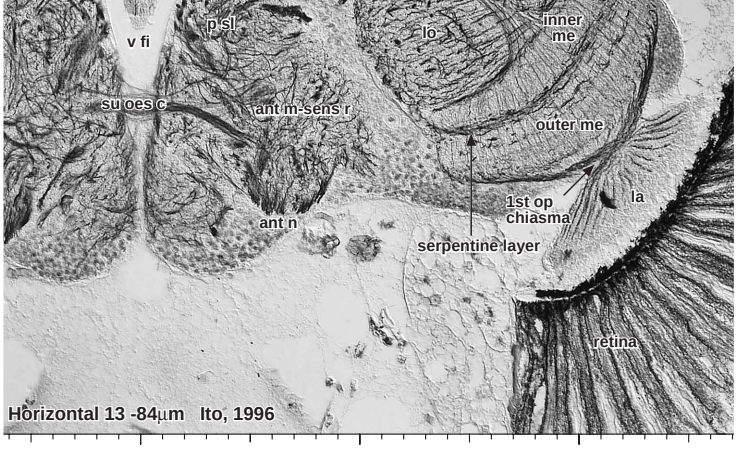

Horizontal 10 -42μm Ito, 1996
muscle No.1
2nd op chiasma
lop
lo
inner me
s con p sl
lo / lop bdl
g c
c op fo
outer me
v-l pr (op fo)
la
fasc op fo
1st op chiasma
serpentine layer
ant lob
root of m ACT / i ACT
recurrent n
ant n
retina


Horizontal 07 0μm Ito, 1996
trachea
muscle No.1
i ACT
ocellar n
lo
inner me
pr br
i l pr
outer me
i m pr
f b
l pt
1st op chiasma
v-l pr
e b
v b
la
g ob t
beta
m bdl
l op t
ant lob
in ant lob t
muscle No.16
retina
ant n

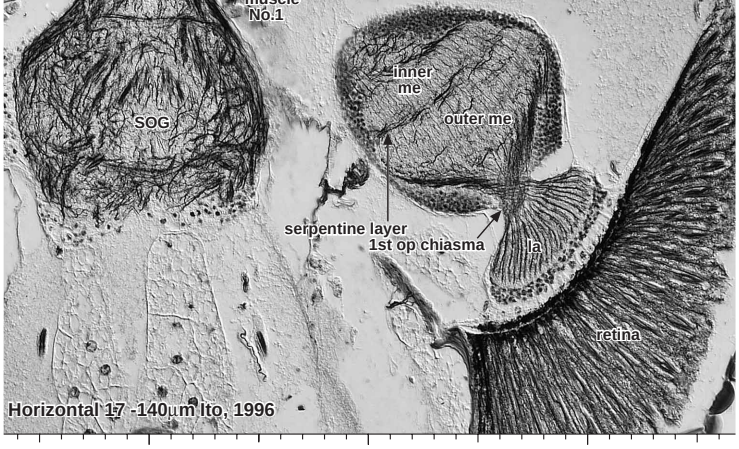

Horizontal 11 -56μm Ito, 1996
muscle No.1
2nd op chiasma
g f of lop neurons
recurrent n
p op t
lop
p sl
inner me
lo
g c
ant m-sens r
outer me
la
v-l pr
1st op chiasma
p op t
serpentine layer
ant lob
ant n
oes
oes foramen
retina


Horizontal 08 -14μm Ito, 1996
muscle No.1
neurite of f b
i ACT
ocellar n
lop
inner me
lo
outer me
f b
i m pr
i l pr
1st op chiasma
v-l pr
la
e b
v b
ant lob
m bdl
in ant lob t
ant n
retina

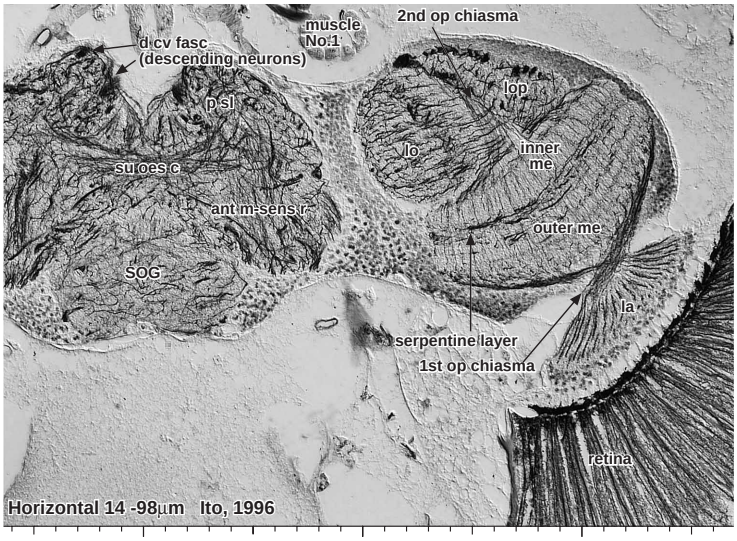

Horizontal 12 -70μm Ito, 1996
muscle No.1
g f of lop neurons
2nd op chiasma
d fi
p op t
lop
p sl
oes
inner me
lo
ant m-sens r
outer me
v-l pr
la
1st op chiasma
ant lob
p op t
serpentine layer
ant n
v fi
oes foramen
retina
oes



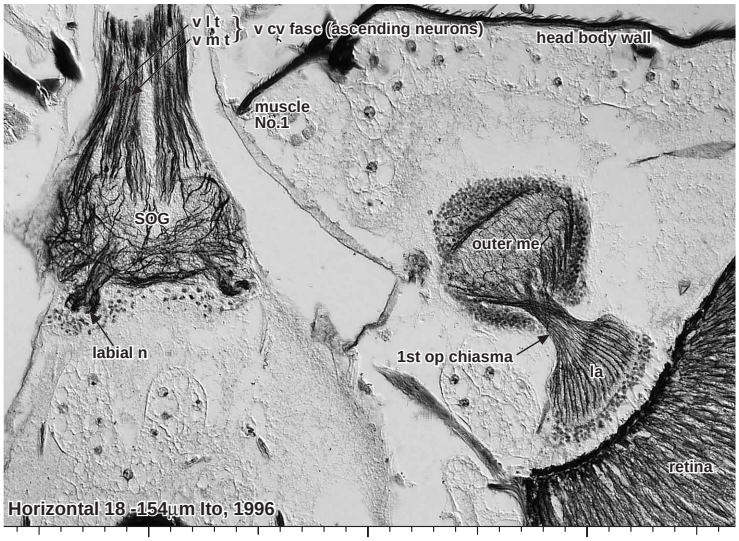
Horizontal 13 -84μm Ito, 1996



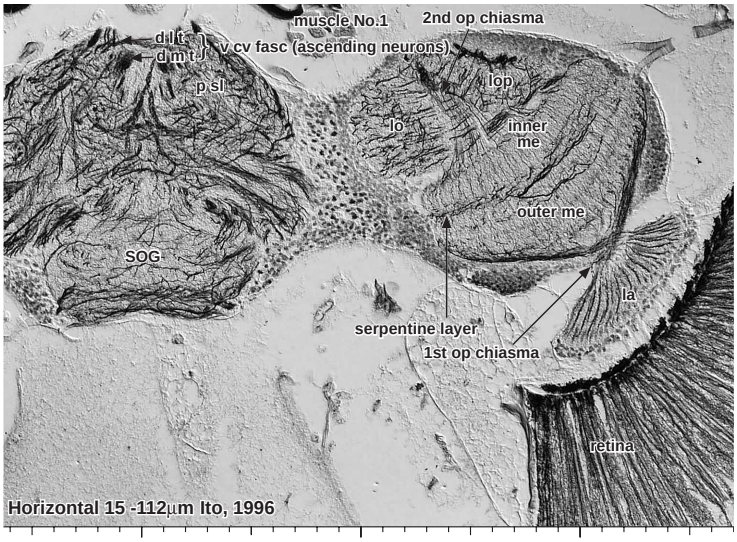
Horizontal 17 -140μm Ito, 1996



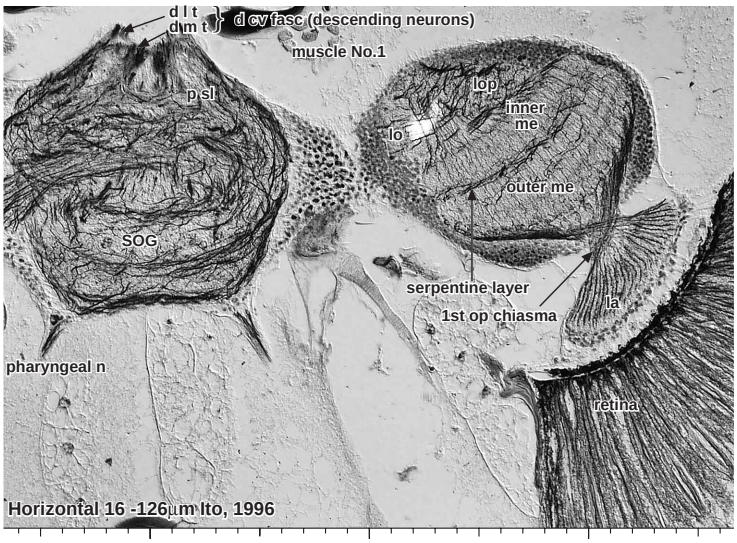
Horizontal 14 -98μm Ito, 1996



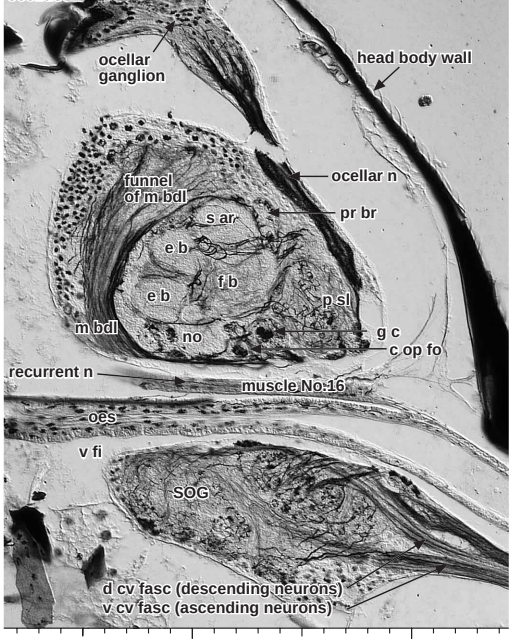
Horizontal 18 -154μm Ito, 1996

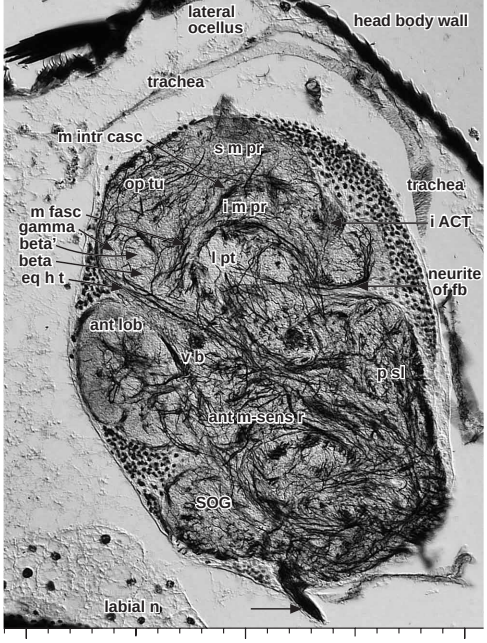


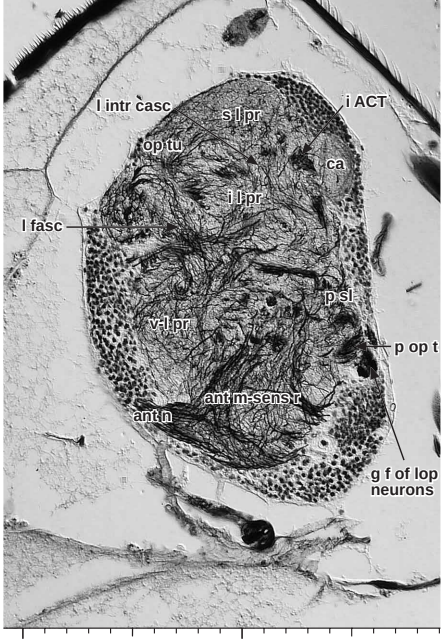
Horizontal 15 -112μm Ito, 1996

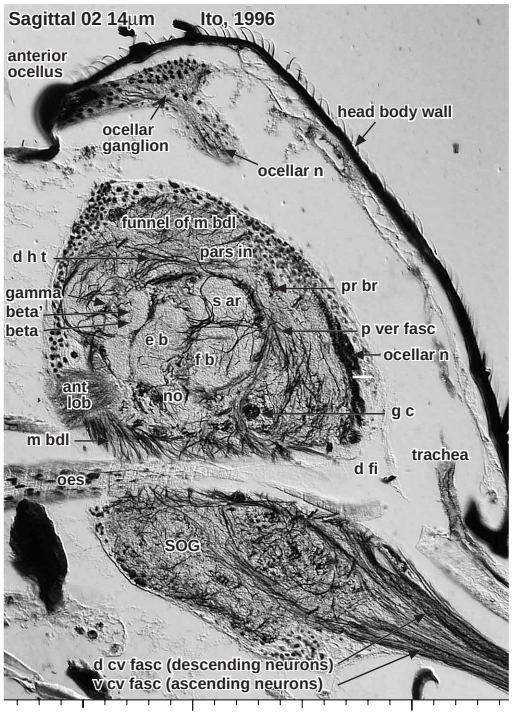


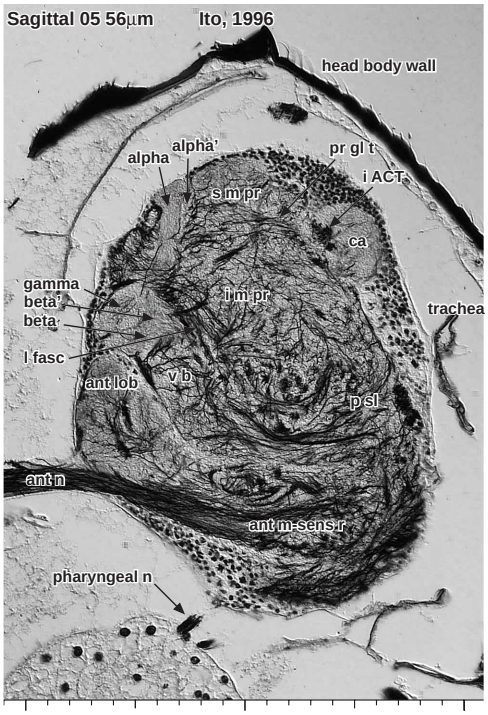
Horizontal 16 -126μm Ito, 1996

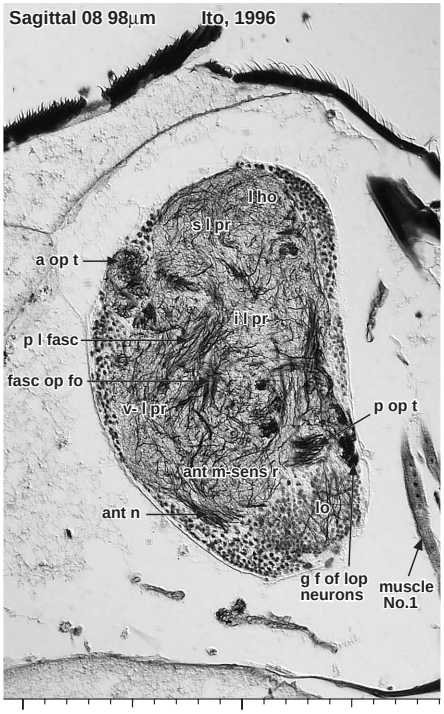

ocellar ganglion
head body wall
ocellar n
funnel of m bdl
pr br
s ar
e b
f b
e b
p sl
m bdl
no
g c
c op fo
recurrent n
muscle No.16
oes
v fi
SOG
d cv fasc (descending neurons)
v cv fasc (ascending neurons)

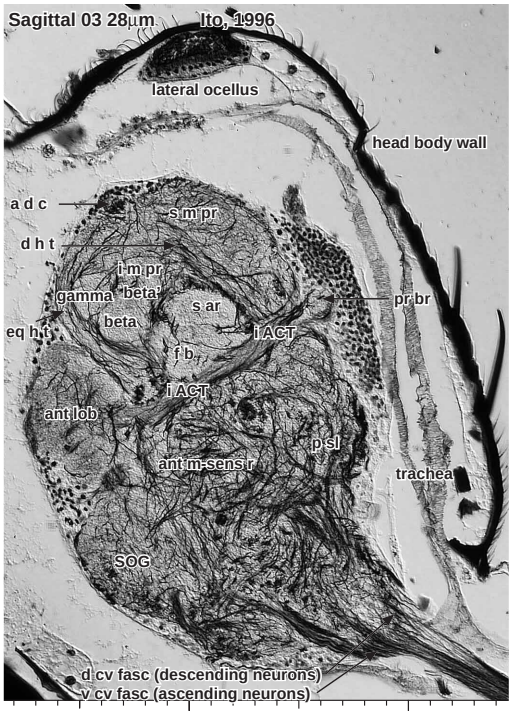

lateral ocellus
head body wall
trachea
m intr casc
s m pr
op tu
trachea
m fasc
gamma
beta'
beta
eq h t
i m pr
i ACT
l pt
neurite of fb
ant lob
v b
p sl
ant m-sens r
SOG
labial n

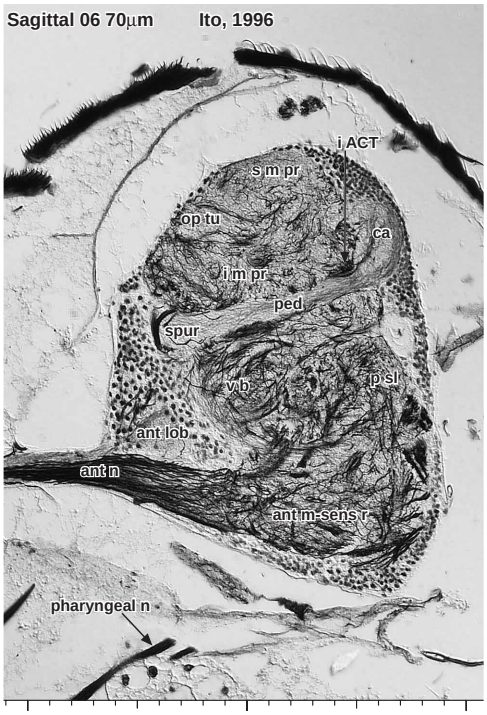

l intr casc
s l pr
i ACT
op tu
ca
i l pr
l fasc
p sl
v-l pr
p op t
ant m-sens r
ant n
g f of lop neurons

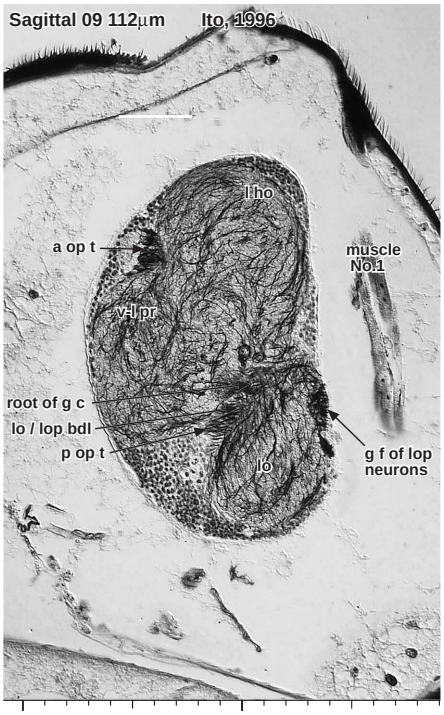

Sagittal 02 14µm lto, 1996
anterior ocellus
ocellar ganglion
head body wall
ocellar n
funnel of m bdl
d h t
pars int
gamma
beta'
beta
pr br
s ar
p ver fasc
e b
ocellar n
f b
ant lob
no
g c
m bdl
trachea
d fi
oes
SOG
d cv fasc (descending neurons)
v cv fasc (ascending neurons)

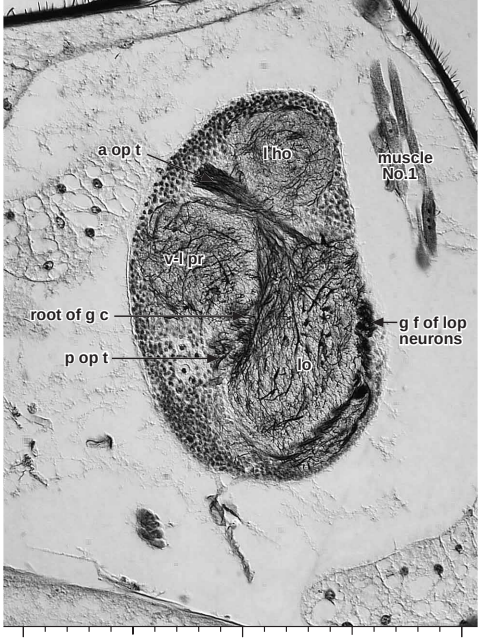

Sagittal 05 56µm lto, 1996
head body wall
alpha
alpha'
pr gl t
i ACT
s m pr
ca
gamma
beta'
beta
i m pr
trachea
l fasc
ant lob
v b
p sl
ant n
ant m-sens r
pharyngeal n

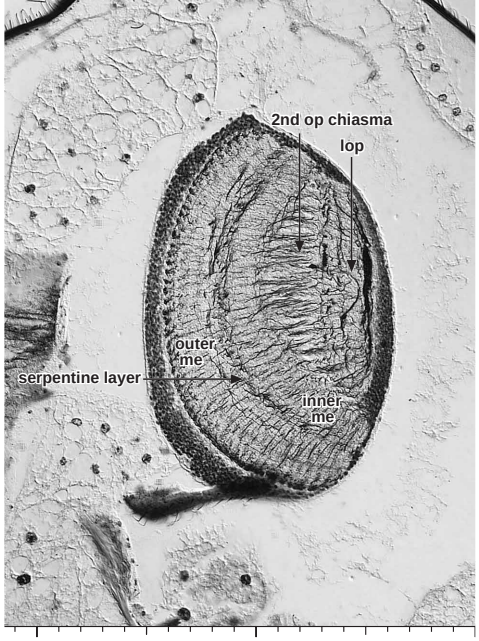

Sagittal 08 98µm lto, 1996
l ho
s l pr
a op t
i l pr
p l fasc
fasc op fo
v- l pr
p op t
ant m-sens r
ant n
lo
g f of lop neurons
muscle No.1

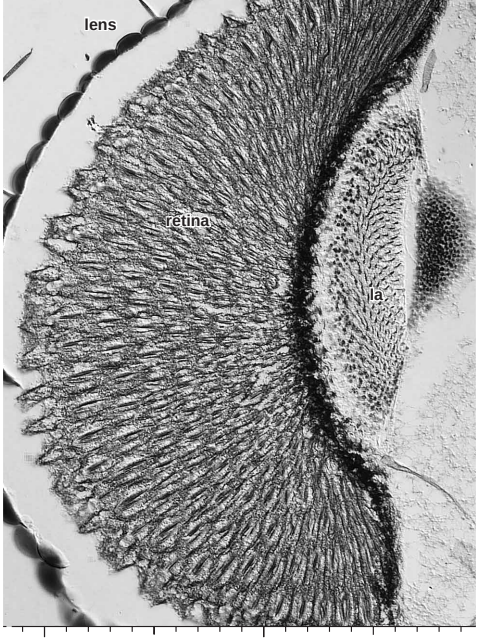

Sagittal 03 28µm lto, 1996
lateral ocellus
head body wall
a d c
s m pr
d h t
i m pr
gamma
beta'
s ar
pr br
beta
eq h t
i ACT
f b
i ACT
ant lob
p sl
ant m-sens r
trachea
SOG
d cv fasc (descending neurons)
v cv fasc (ascending neurons)

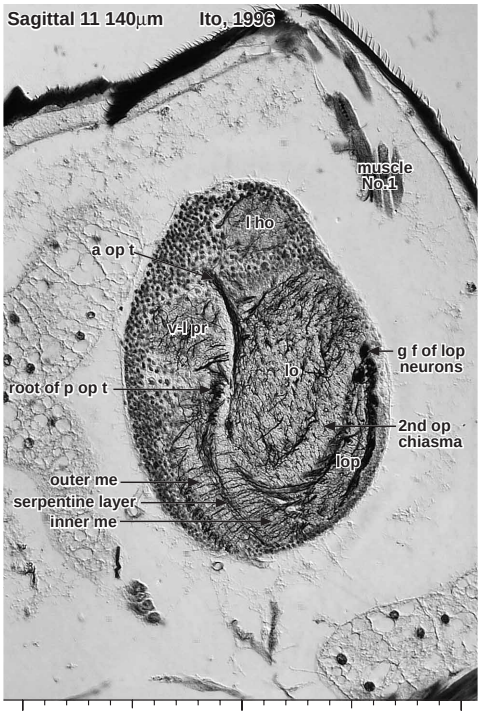

Sagittal 06 70µm lto, 1996
i ACT
s m pr
op tu
ca
i m pr
ped
spur
v b
p sl
ant lob
ant n
ant m-sens r
pharyngeal n

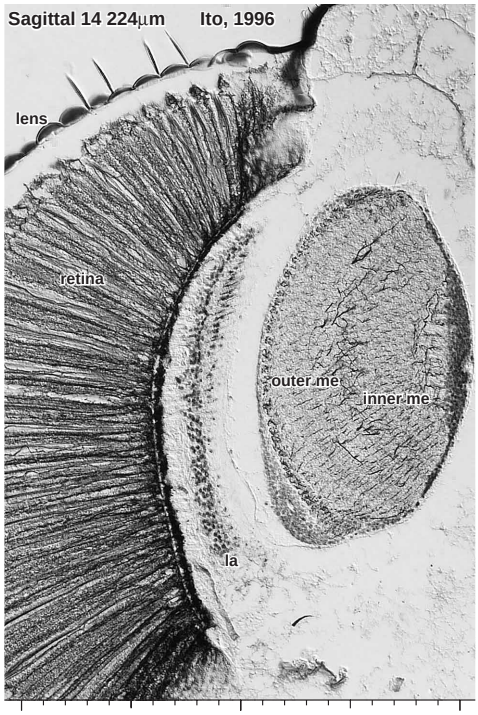

Sagittal 09 112µm lto, 1996
l ho
a op t
muscle No.1
v-l pr
root of g c
lo / lop bdl
p op t
lo
g f of lop neurons

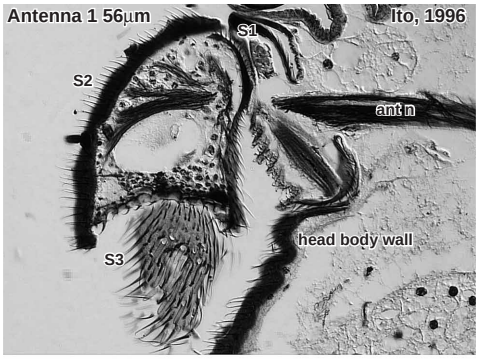

a op t
l ho
muscle No.1
v-l pr
root of g c
g f of lop neurons
p op t
lo

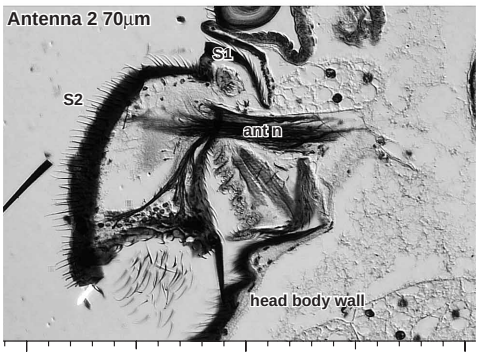

2nd op chiasma
lop
outer me
serpentine layer
inner me

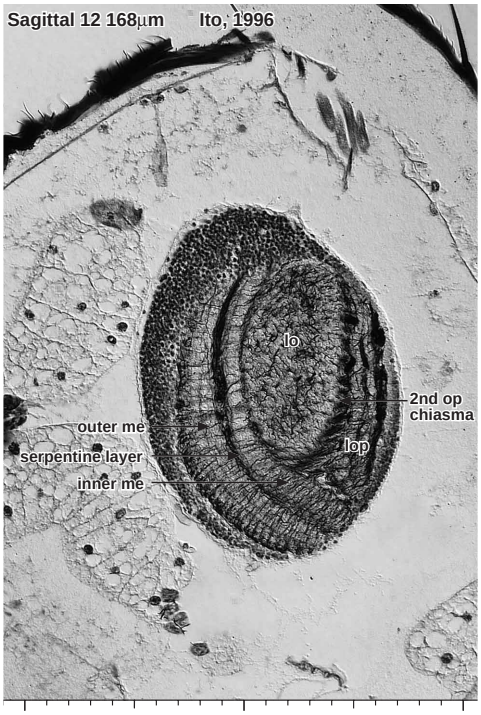

lens
retina
la

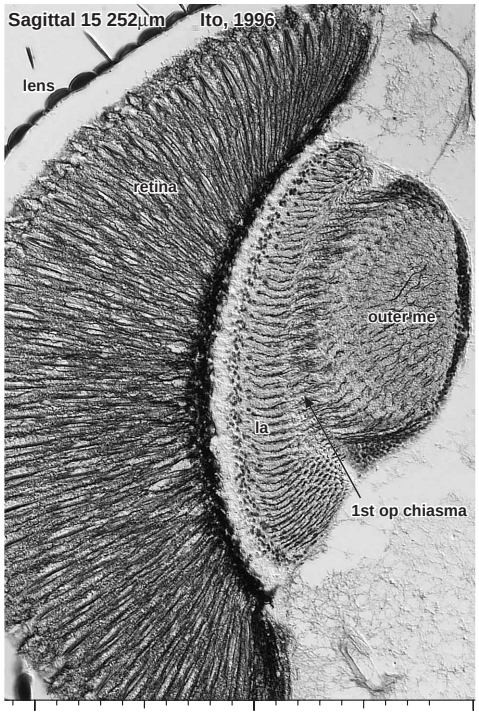

Sagittal 11 140µm
Ito, 1996
muscle No.1
l ho
a op t
v-l pr
g f of lop neurons
lo
root of p op t
2nd op chiasma
lop
outer me
serpentine layer
inner me

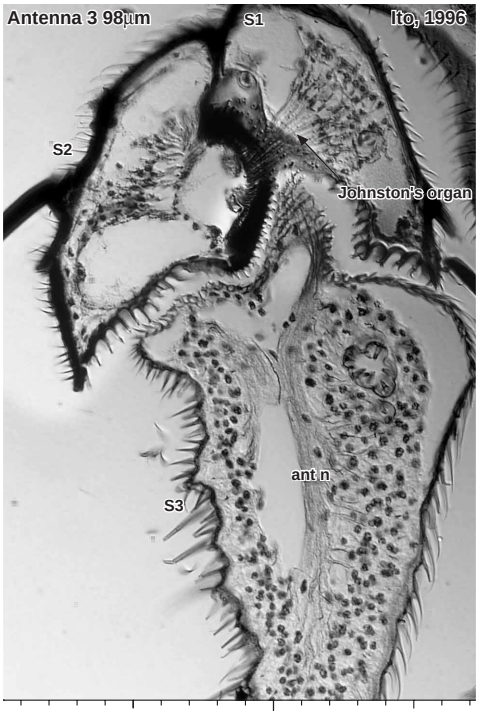

Sagittal 14 224µm
Ito, 1996
lens
retina
outer me
inner me
la


Antenna 1 56µm
Ito, 1996
S1
S2
ant n
head body wall
S3


Antenna 2 70µm
S1
S2
ant n
head body wall


Sagittal 12 168µm
Ito, 1996
lo
2nd op chiasma
outer me
lop
serpentine layer
inner me


Sagittal 15 252µm
Ito, 1996
lens
retina
outer me
la
1st op chiasma


Antenna 3 98µm
S1
Ito, 1996
S2
Johnston's organ
ant n
S3