

Character Differences that help
Distinguish
N. gigas from *N. californiensis*

Head



1118

N. californiensis



0940

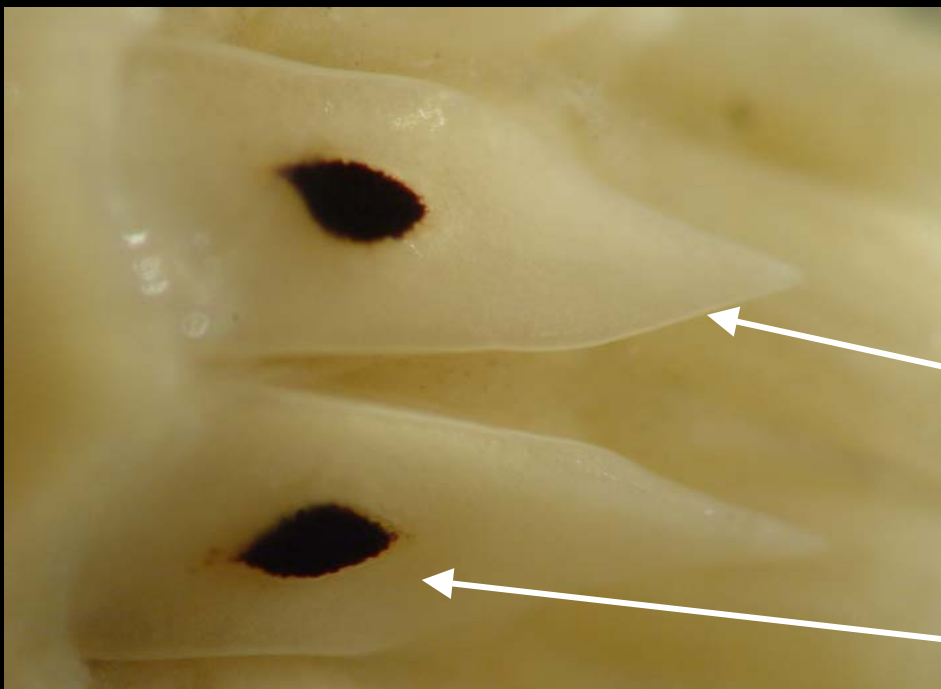
N. gigas

Eye Stalks



Eye stalk tappers gradually and ommatidia are more circular in shape

Differences in eye stalk shape are consistent for males and females and individuals along a gradient of sizes between the two species



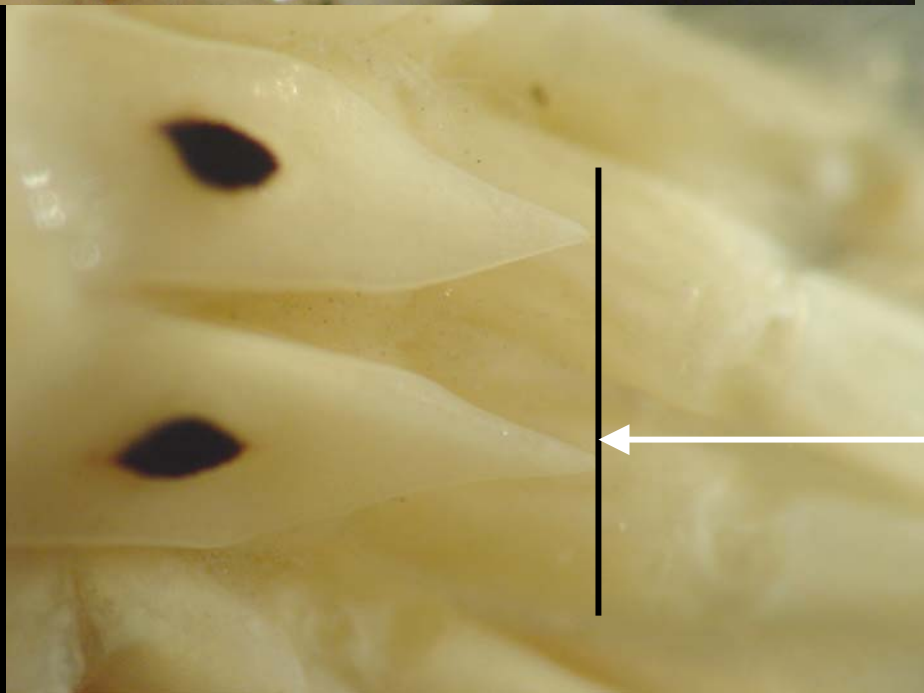
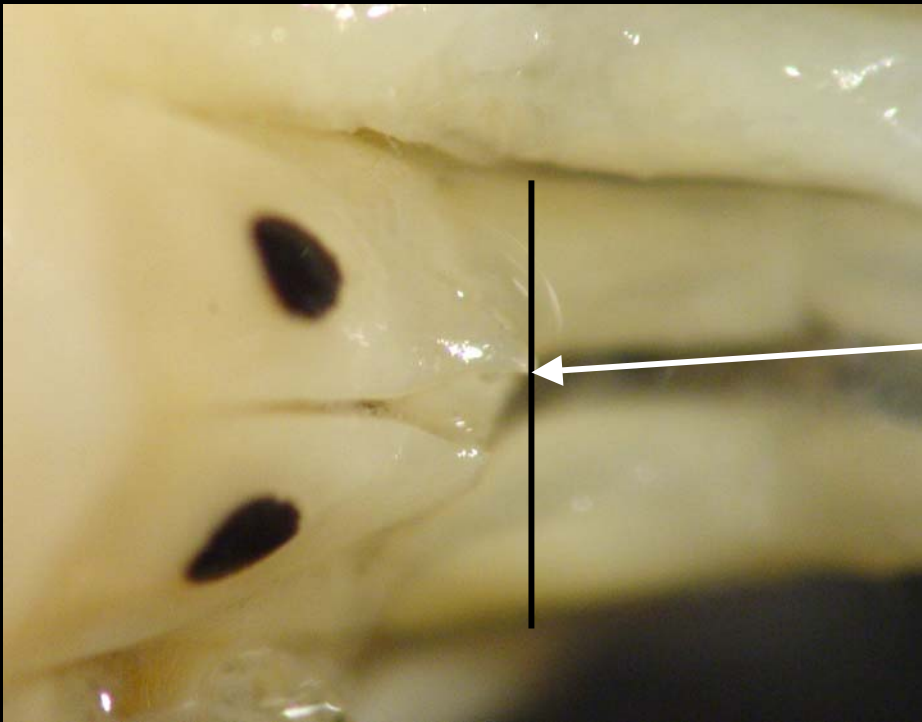
Eye stalk is elongate and much more narrowly tapered towards the tips. The ommatidia taper length-wise.

Eye stalk length

Eye stalk length is $\sim 1/3$ the length of the second segment of the 2nd antennae

Differences in eye stalk length are consistent for males and females and individuals along a gradient of sizes between the two species

Eye stalk length is $\sim 1/2$ to $3/4$ the length of the second segment of the 2nd antennae



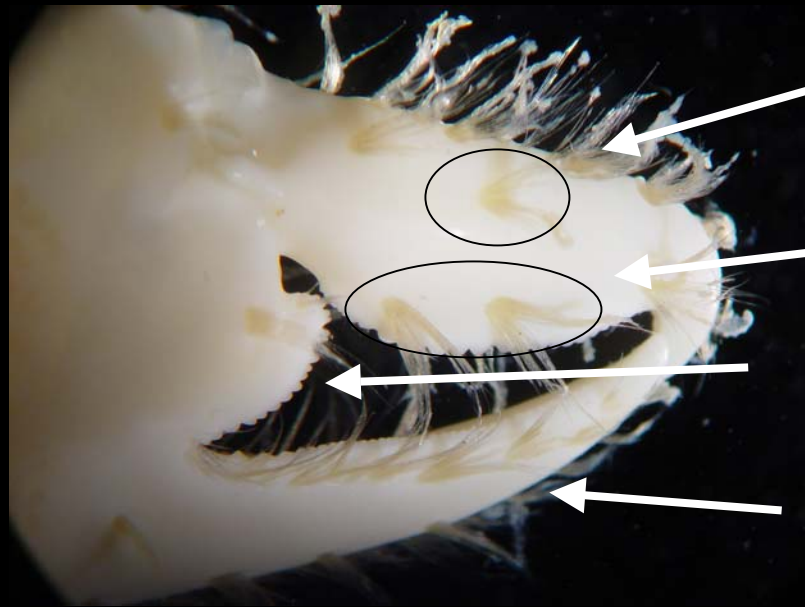
Characters of the Major Chelae

- Setal tuft clusters
 - Mesial clusters on the dactyl
 - Ventral margin clusters along the dactyl
- Carina morphology between fixed finger and dactyl
 - Crested toothed carina
 - Knobbed carina
- Thickness of fixed fingers in adults
 - Not noticeable in younger/immature specimens

Major Chelae: Males

- Carina changes form with size
 - Pictorial representation of development from large to small
 - 16.2 mm through 7.7 mm
 - Difficult to distinguish below 10.0 mm
- Setal tuft arrangements do not change in number or placement regardless of size and can distinguish species even if carinas are not distinguishable

Propodus & Dactyl Males



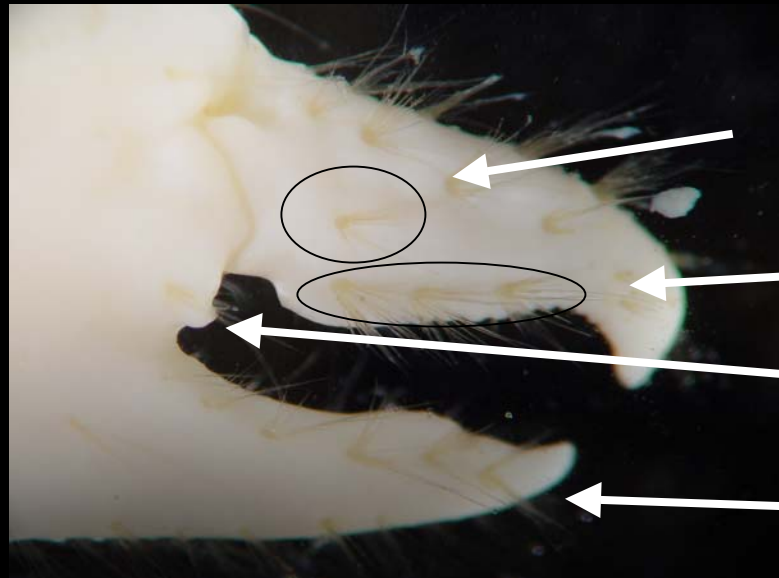
One midline marginal setal tuft

Two setal tufts on ventral margin

Toothed carina

Slender fixed finger

N. californiensis



One proximal marginal setal tuft

Three setal tufts on ventral margin

Knobbed
carina

Thickened fixed finger

N. gigas

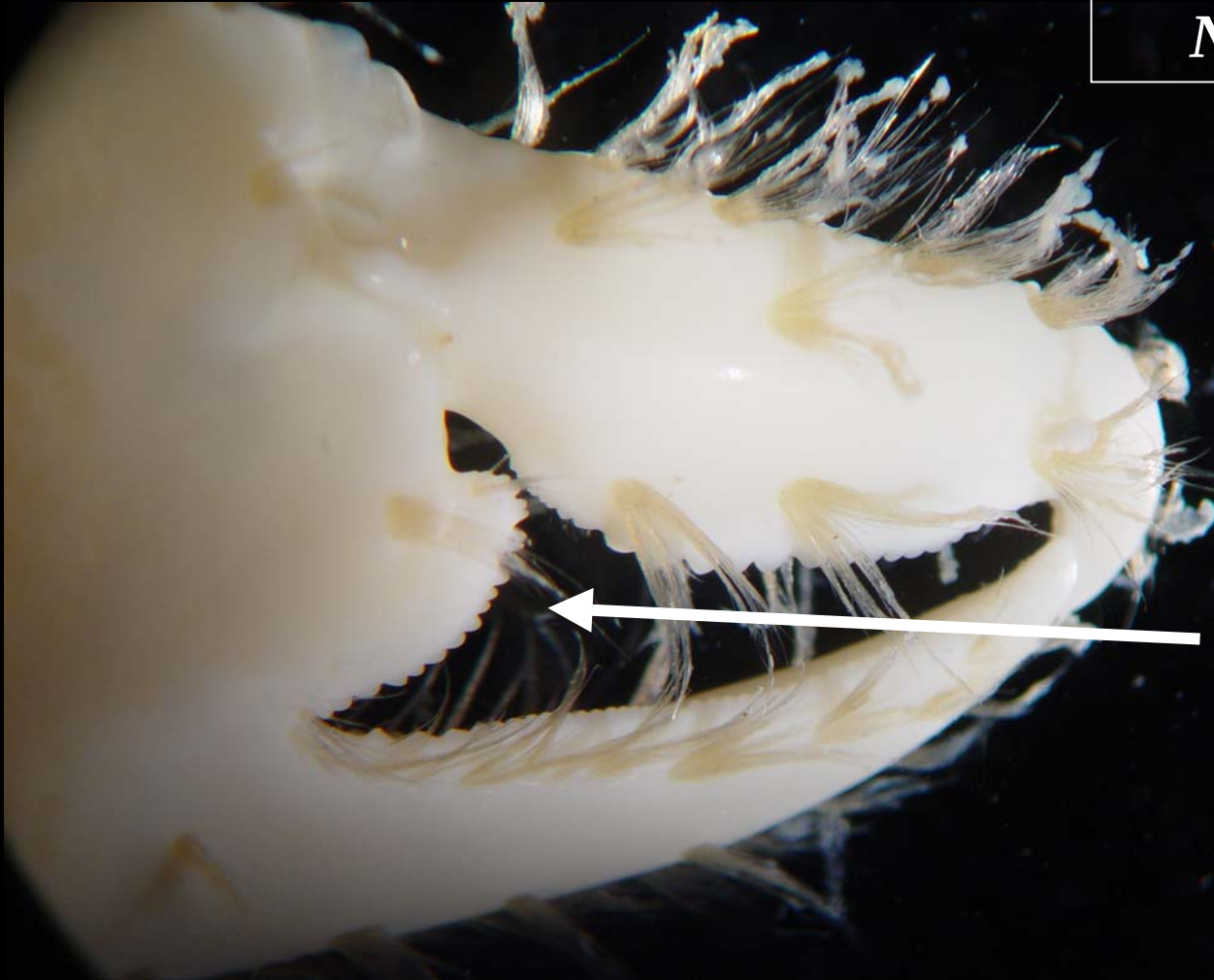
Propodus & Dactyl: Males

N. californiensis

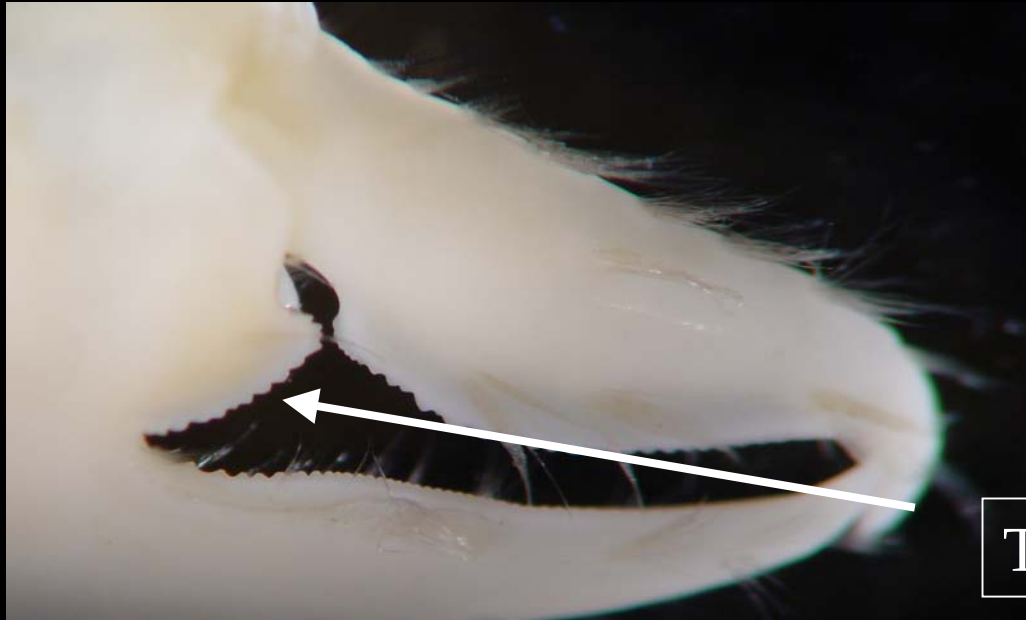
Male 16.2 mm

Fully developed
toothed carina

Specimen: 0757



Propodus & Dactyl: Males

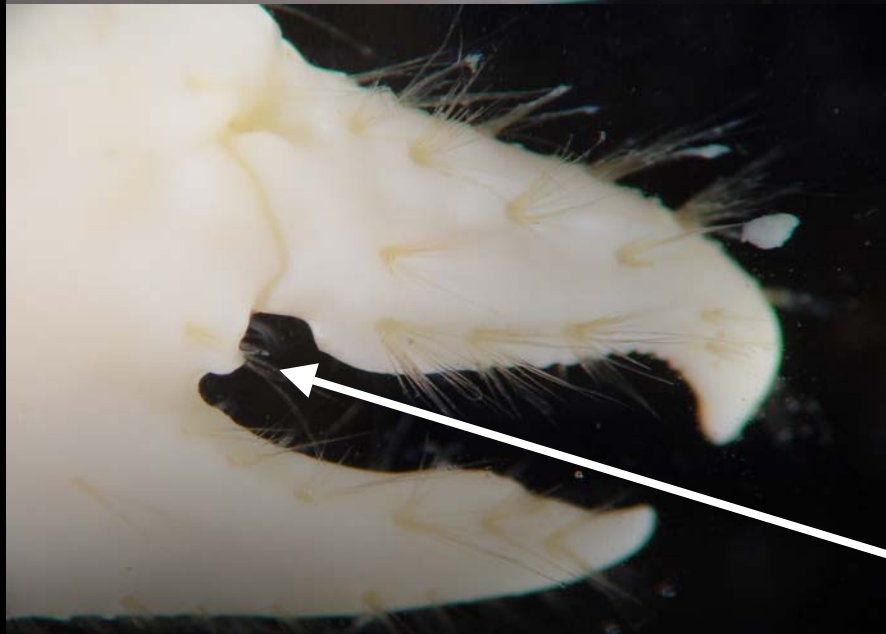


N. californiensis

11.4 mm

Specimen: 0999

Toothed carina well formed



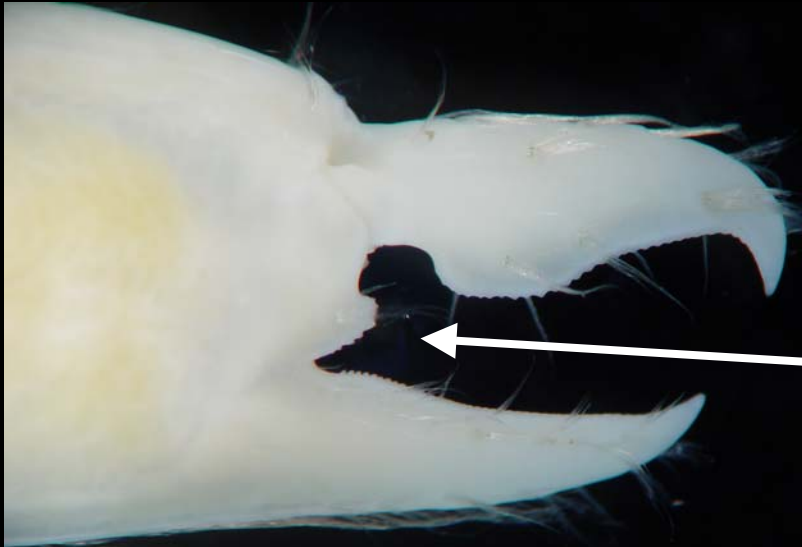
N. gigas

12.5 mm

Specimen: 1084

Knobbed carina well formed

Propodus & Dactyl: Males



N. californiensis

10.6 mm

Specimen: 1004

Toothed carina still present at this size



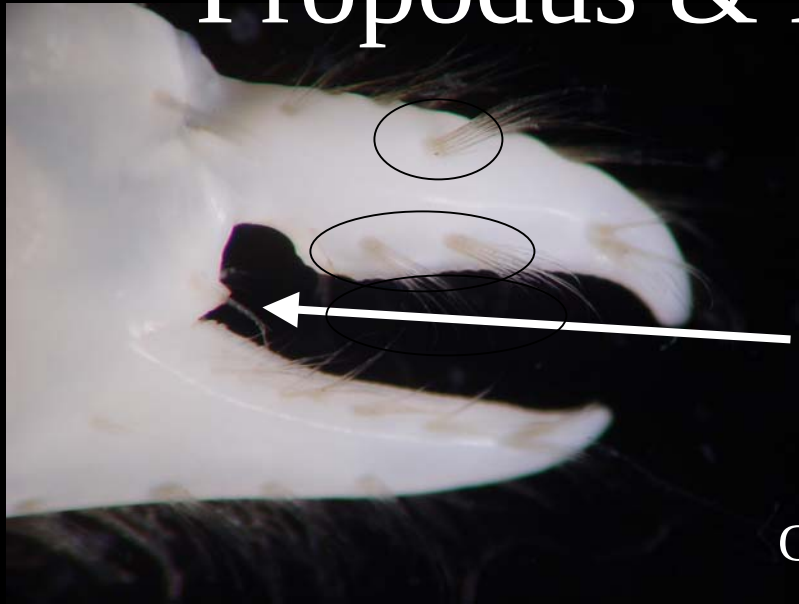
N. gigas

10.0 mm

Specimen: 0824

Knobbed carina not well formed at this size

Propodus & Dactyl: Males



N. californiensis

8.0 mm

Specimen: 1024

Carina just beginning to form



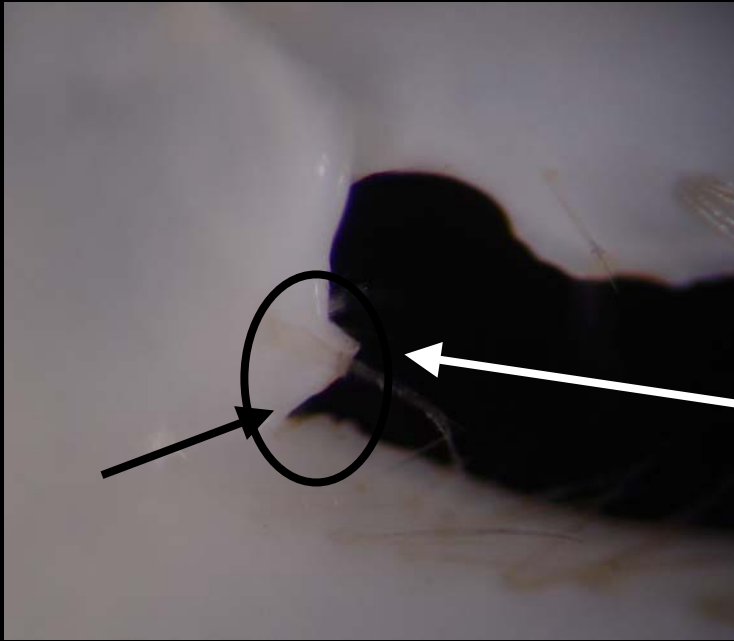
Although the carinas change at this size and are difficult to discern, the setal tuft placements and counts do not change.

N. gigas

8.6 mm

Specimen: 0908

Large Cheliped Carina: Males

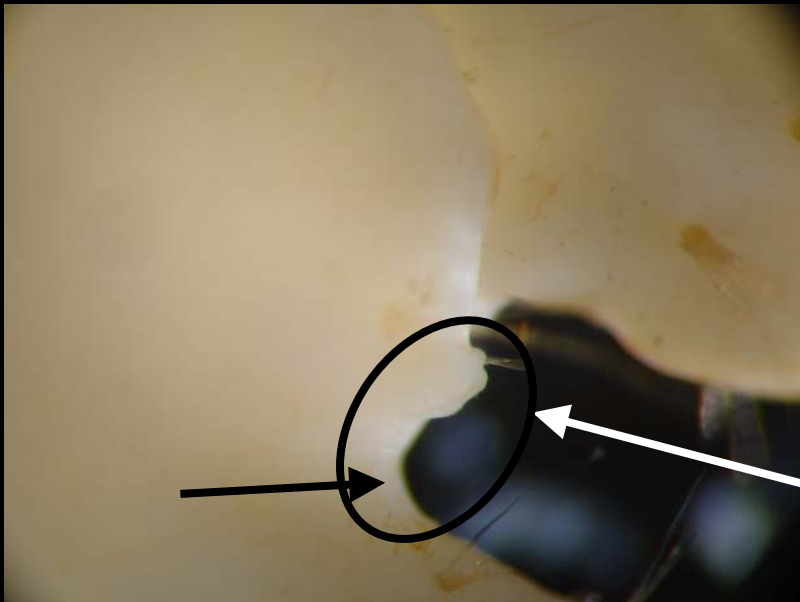


N. californiensis

8.0 mm

Specimen: 1024

Carina is pointed, just beginning to form
and creates triangle space below it



N. gigas

8.6 mm

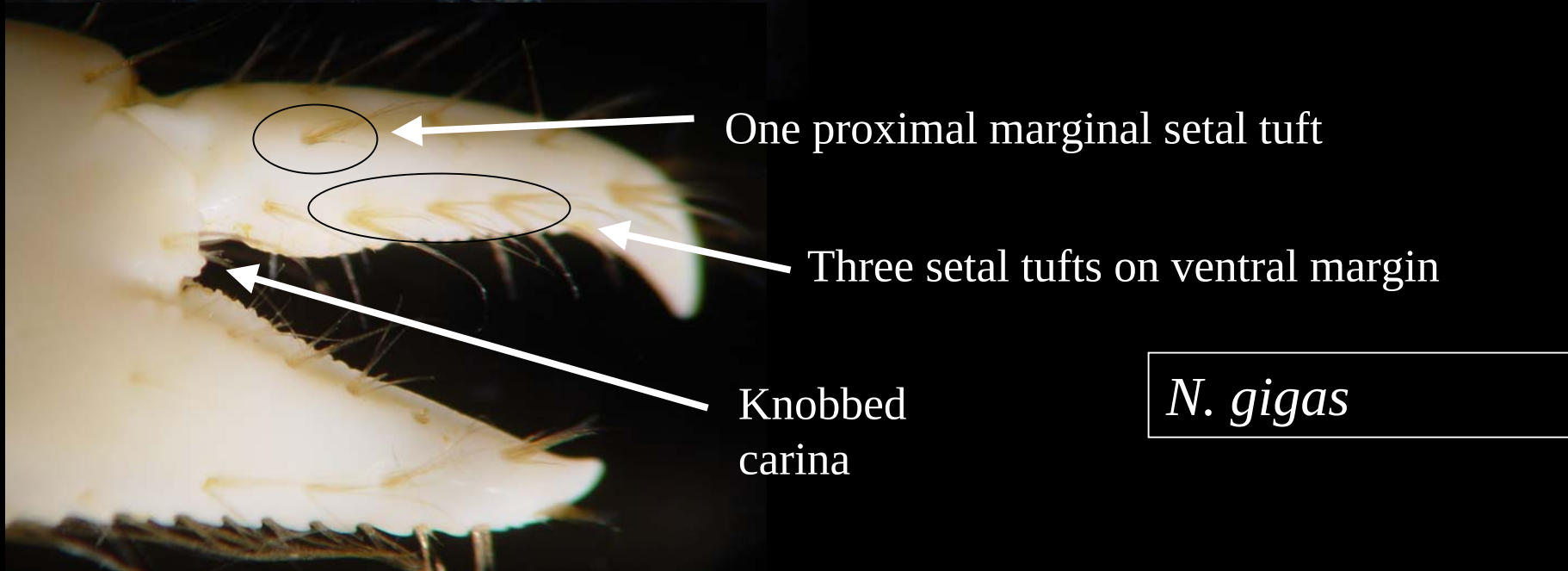
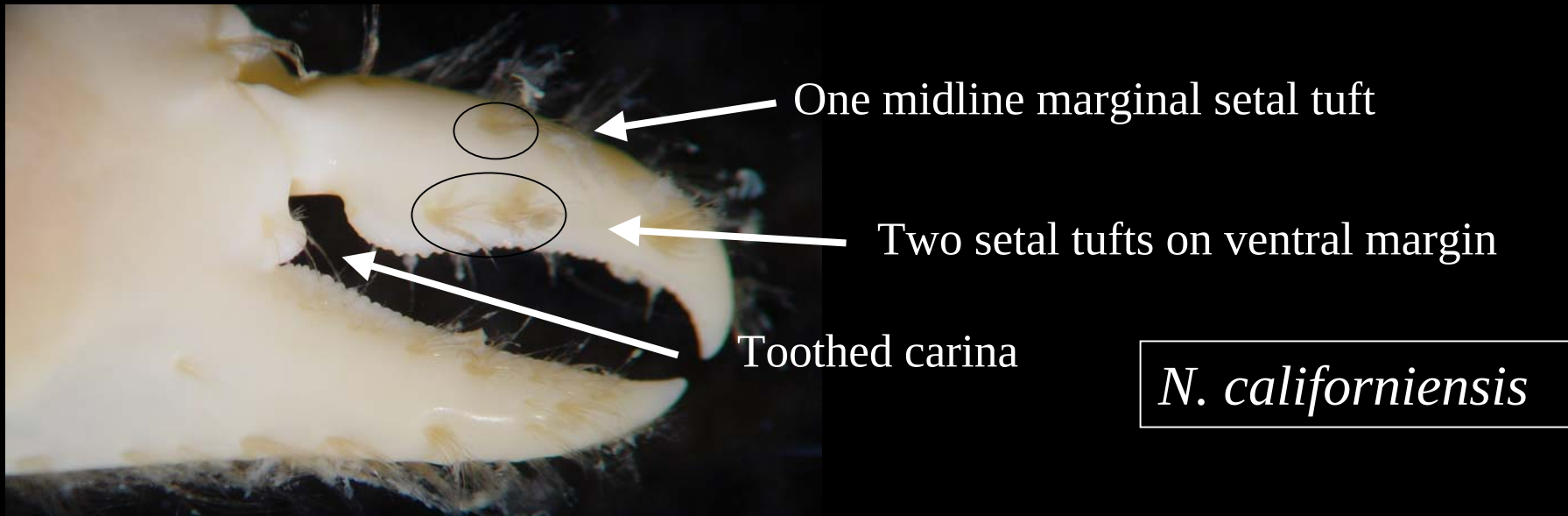
Specimen: 0908

Carina more knobbed and forms
square space below it

Characters of the Major Chelae: Females

- Carina changes form with size
 - Pictorial representation of development from large to small
 - 15.2 mm through 7.8 mm
 - Difficult to distinguish below 10.0 mm
- Setal tuft arrangements do not change in number or placement regardless of size and can distinguish species even if carinas are not distinguishable

Propodus & Dactyl: Females



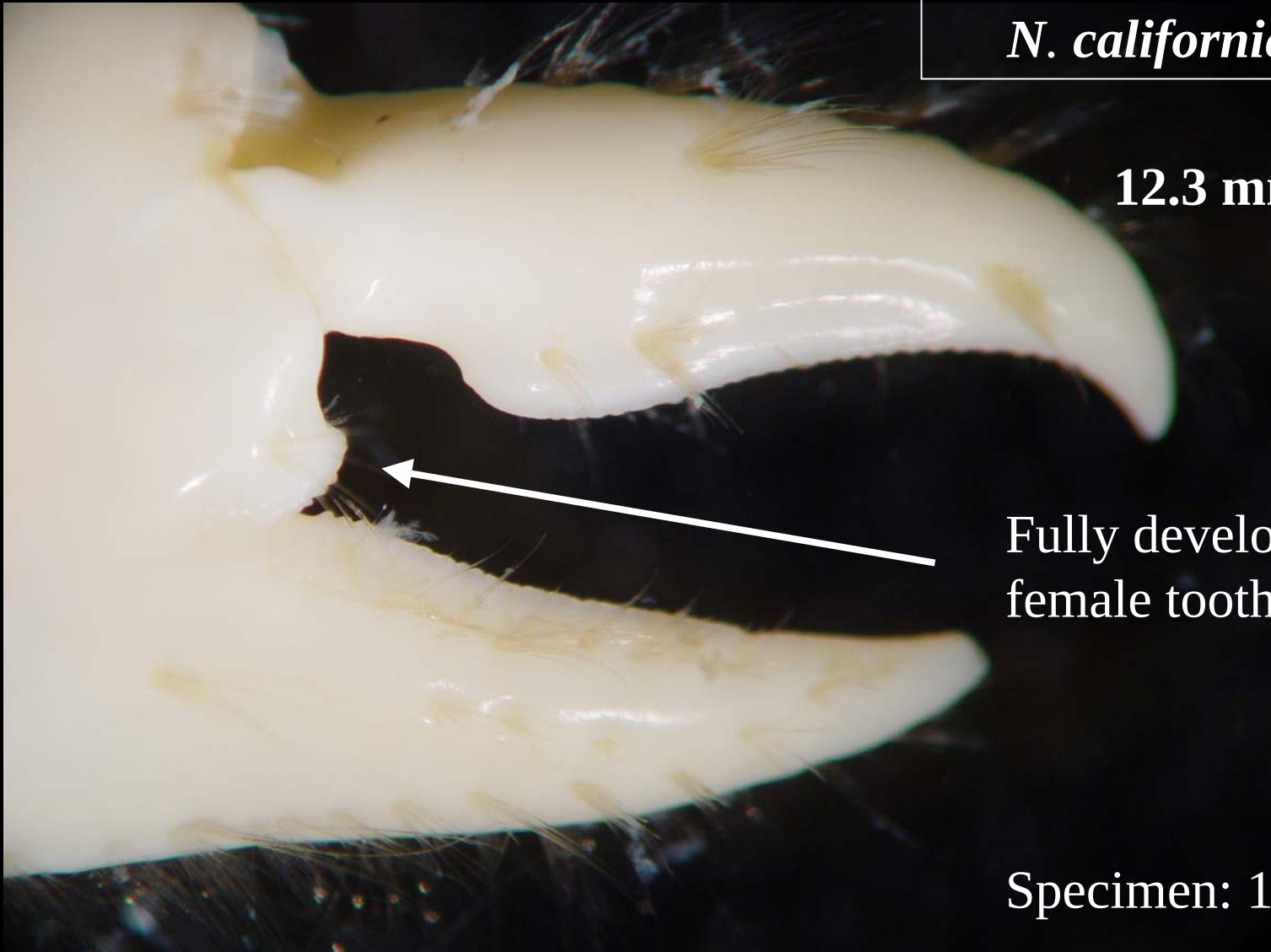
Propodus & Dactyl: Females

N. californiensis

12.3 mm

Fully developed
female toothed carina

Specimen: 1118



Propodus & Dactyl: Females



N. californiensis

15.2 mm

Specimen: 1097

Toothed carina



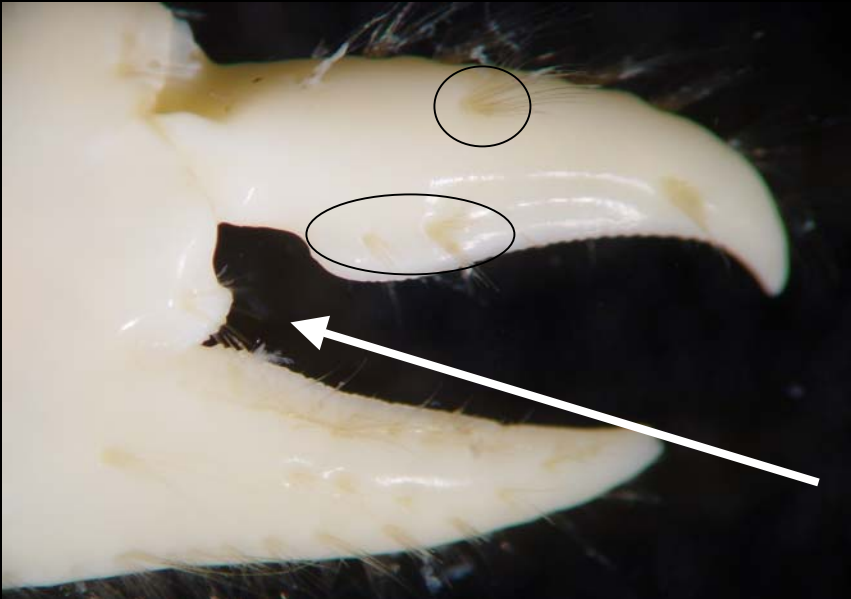
N. gigas

13.0 mm

Specimen: 0899

Knobbed
carina

Propodus & Dactyl: Females

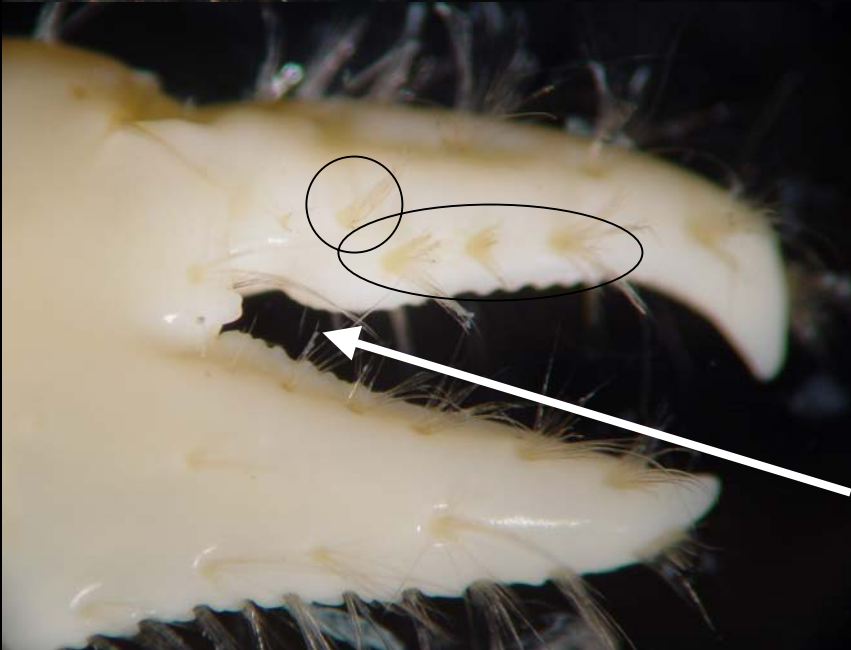


N. californiensis

12.3 mm

Specimen: 1118

Toothed carina



N. gigas

11.9 mm

Specimen: 0940

Knobbed
carina

Propodus & Dactyl: Females



N. californiensis

10.5 mm

Specimen: 0813

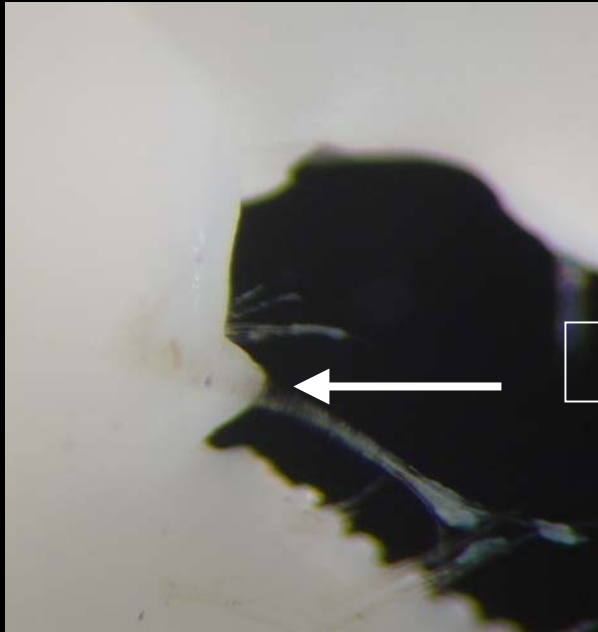
At this size the carinas become difficult to distinguish but the setal tuft position and counts remain the same

N. gigas

10.1 mm

Specimen: 0863

Propodus & Dactyl: Females



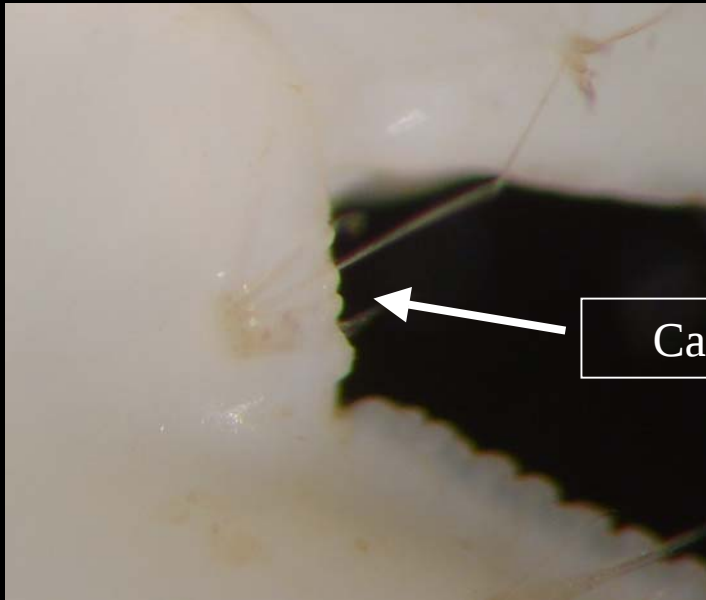
Carina is pointed

N. californiensis

10.5 mm

Specimen: 0813

Close-up of the carinas show structural differences



Carina is not pointed

N. gigas

10.1 mm

Specimen: 0863

Propodus & Dactyl: Females



Carina pointy

N. californiensis

8.1 mm

Specimen: 1069

Carinas pretty much indistinguishable, but setal placement and counts are still reliable.



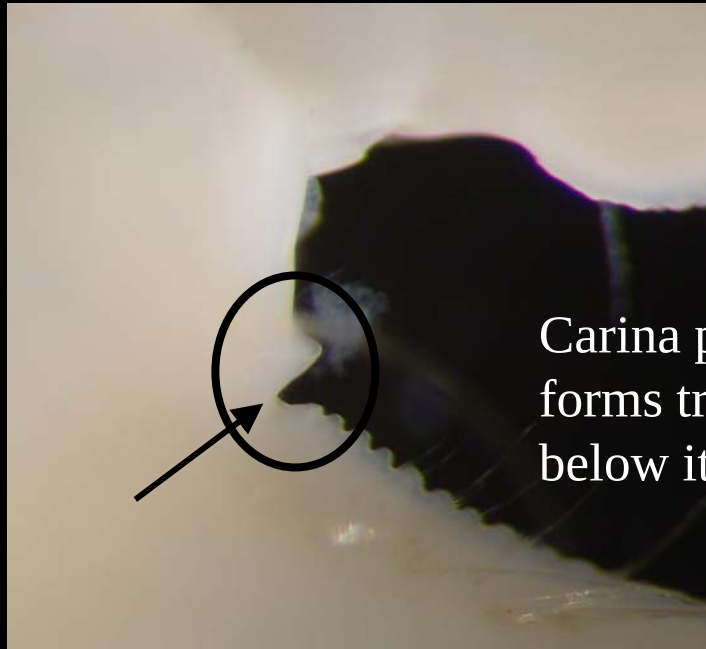
Carina more knobbed

N. gigas

7.8 mm

Specimen: 0966

Propodus & Dactyl: Females



Carina pointy and
forms triangle space
below it

N. californiensis

8.1 mm

Specimen: 1069



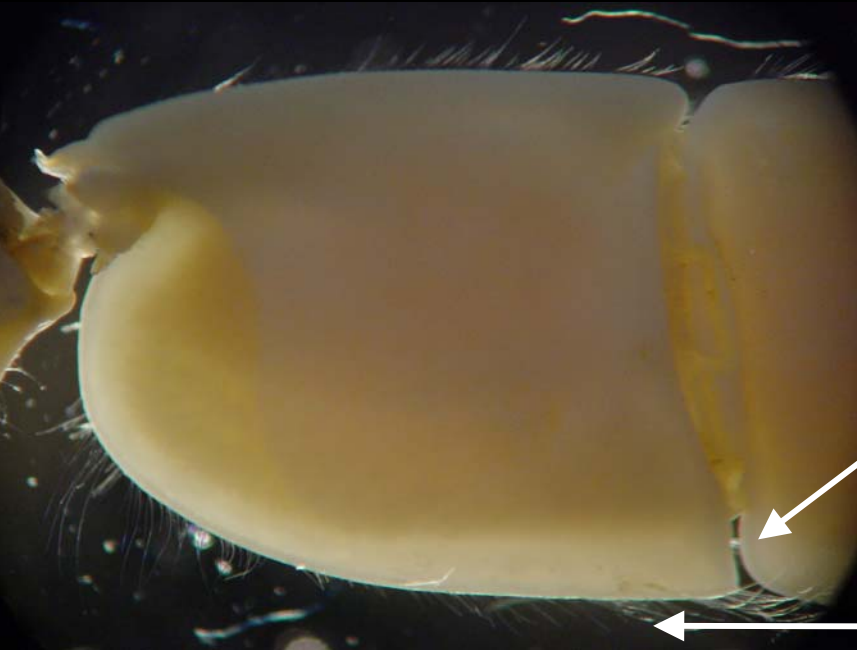
Carina more knobbed
and forms square space
below it

N. gigas

7.8 mm

Specimen: 0966

Carpus



*Sinus shape and gap vary with gender and size

Setae along the margin are shorter than *N. gigas* below



* Sinus shape and gap vary with gender and size

Setae along the margin are longer than species above

Setal Tuft on Carpus (apical inner margin)

Merus

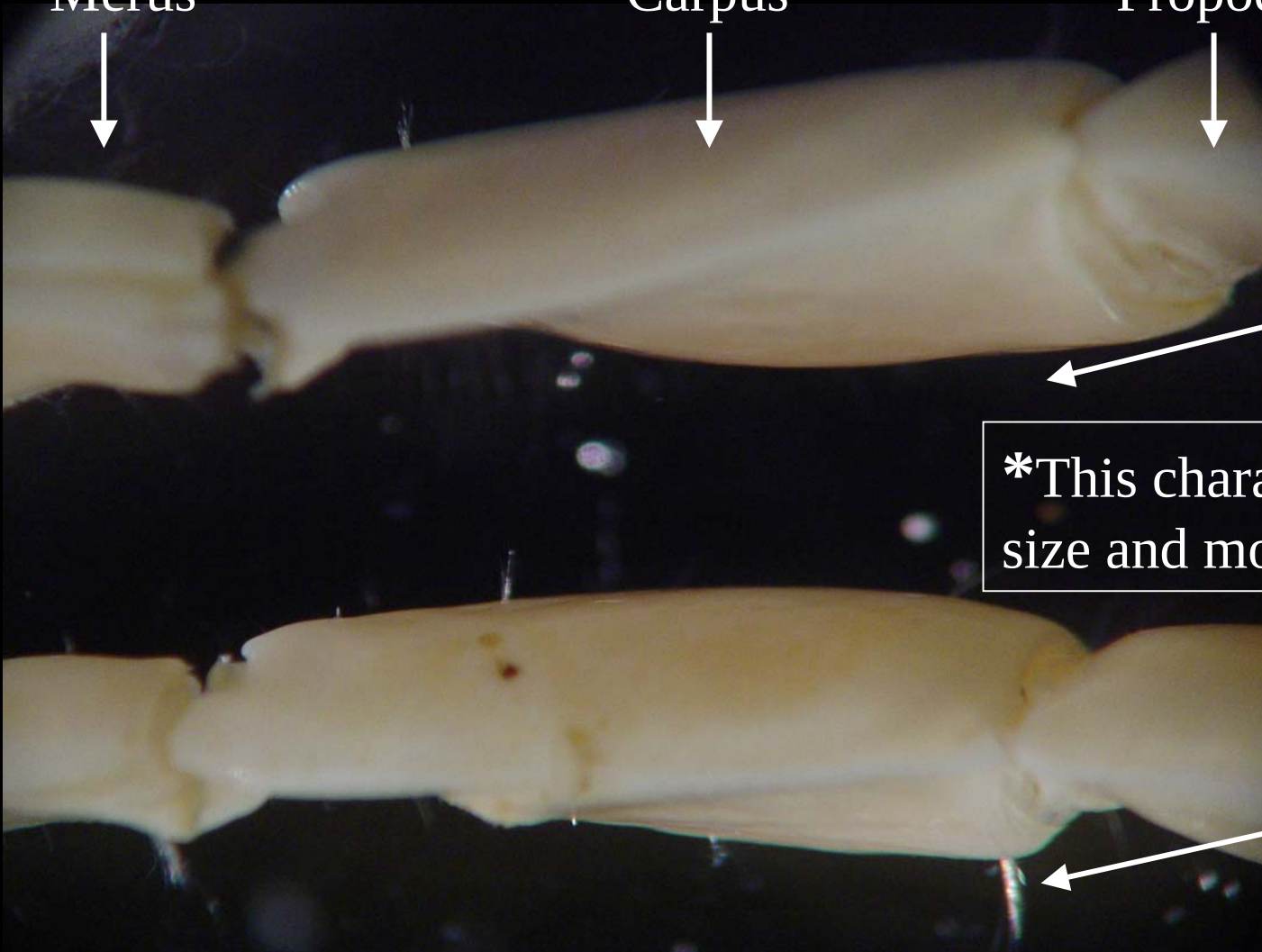
Carpus

Propodus

Setal tuft
absent

*This character varies with
size and molt stage

Setal tuft
present



Small Cheliped

1118

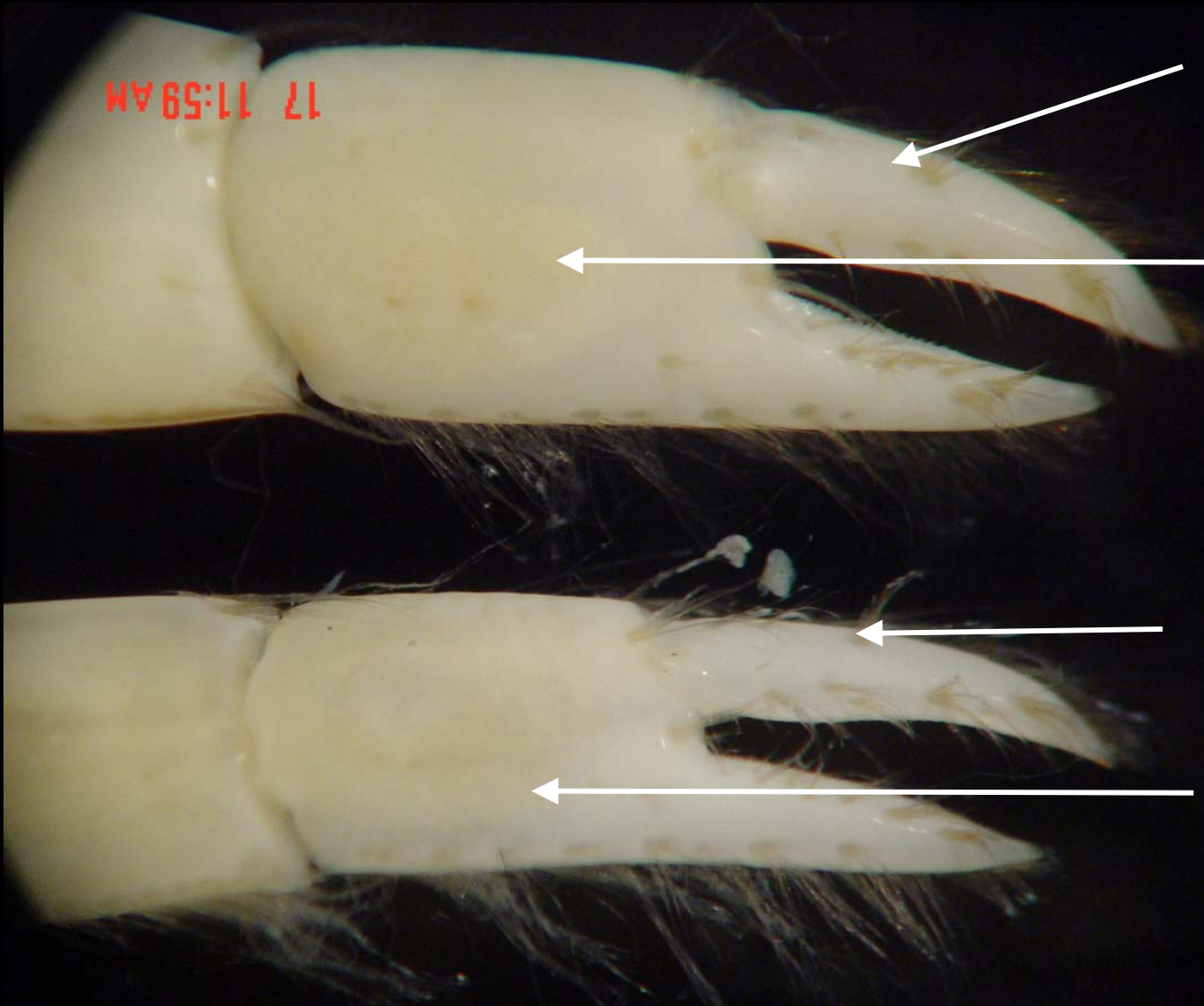
N. californiensis



0940

N. gigas

Dactyl & Propodus



Dactyl is wider than
N. gigas below

Propodus is also
wider than *N. gigas*

Dactyl is narrower
than above

Propodus is more
narrow than species
above

Carpus

1118

N. californiensis

Carpus is wider

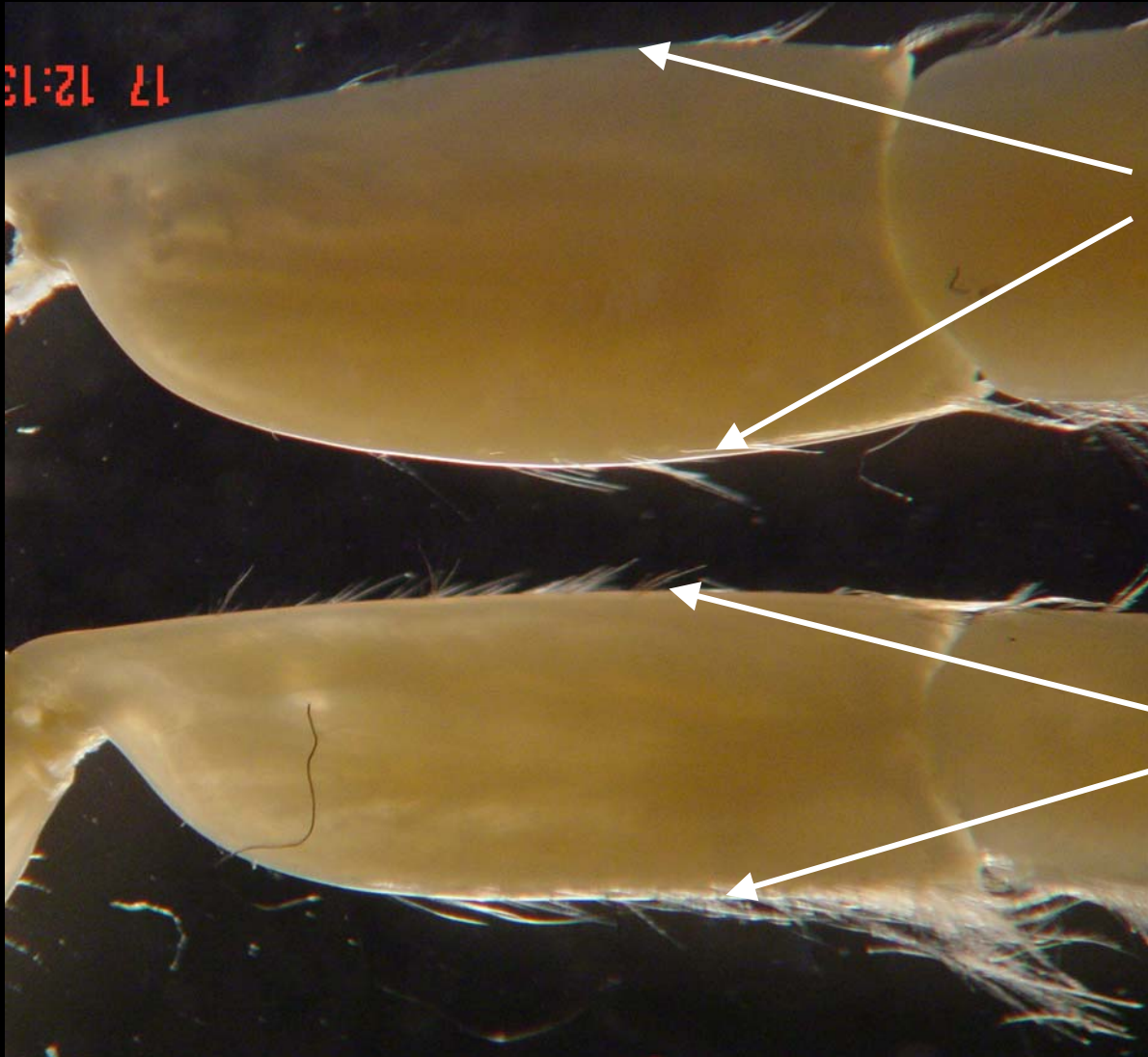


0940

N. gigas

Carpus is narrower

Carpus with back lighting



Sparse setae on dorsal and ventral margins

Many long setae on dorsal and ventral margins

Telson

1118 *N. californiensis*

0940 *N. gigas*

Setal extensions along the margin of the telson vary widely, I don't suggest using telson characters in the future

