# GL21A: PRACTICAL

Arthropods

## Trilobitoidea

1. *Marella splendens* (no. 56, M. Cambrian, **Burgess Shale**, Canada). This shows preservation of typical of the Burgess Shale.

How does this species differ from a trilobite?

## **Trilobites-**

2. *Ogygopsis* sp. (no. 1838) Middle Cambrian. A large well-preserved specimen (free cheeks missing). Make a labeled sketch of this specimen. Label the cephalon, thorax, pygidium, glabella, facial suture, and pleurae. Is this specimen a molt?

3. *Agnostus* sp. (spec. no. 67) Cambrian. *Agnostus* probably had a nektic-planktic (swimming/floating) life habit. Where are the eyes?

How many thoracic segments do each have?

4. Trinucleid sp. (spec. no. 766), *Cryptolithus* sp. (no. 305) and *Trinucleus* sp. (no. 1080), Ordovician. These trilobites had no eyes. How did they 'see'?

No. 766 is the internal mold of a cephalon. Note the marginal arrangement of elongate pits. Why hasn't the cephalon disarticulated?

5. Calymene sp. (no. 4660), Silurian, and Flexicalymene sp. (no. 306), Ordovician.

Make a sketch of the cephalon. Why do you think Flexycalymene sp. is enrolled?

6. *Phacops* sp. (spec. no. 307, 3006) Devonian. Note the superb detail preserved in the large eyes of this specimen. Are there any blind spots?

What type of eye is this?

Draw a diagram to illustrate its structure.

## Decapod Crustaceans (chiefly Crabs)

7. *Carpilius corallinus*, the coral crab (# GL21A/P10/1A) and *Panulirus argus* the spiny lobster ((#GL21A/P10/1B,C). Compare and contrast the form of the carapace in these two species.

Which direction would each of the above move through the water?

8. Notopocoryste sp. (# 707), Cretaceous. A burrowing crab. How is the carapace preserved?

What adaptations for burrowing can you see in the shape and ornamentation of the carapace? 9. Crab (Family Majidae, GL21A/P10/5 A-C). What was this crab's mode of life?

- 10. *Callianassa* sp. (Late Pleistocene, Port Morant Fm., Jamaica). This is a specimen of a highly calcified chela or claw from a common burrowing shrimp (probably responsible for Thalassinoides trace fossils). These belong to one of the most common groups of fossil shrimp. The bodies of the shrimp, however, are only rarely found as fossils. Why?
- 11. Two chelae from the Late Pleistocene, Port Morant Formation, Jamaica. Note free and fixed fingers on both.
- 11A. *Petrochirus bahamensis* (Late Pleistocene, Port Morant Fm., Jamaica). This is a chela (claw) of a fossil hermit crab. As in *Callianassa* sp. above the bodies of hermit crabs are not readily fossilized.
- 11B *Calappa* sp.

How do these two specimens differ?

#### **Barnacles**

12. *Lepas* sp., a goose-neck barnacle (#55w2600), Recent; and *Balanus* sp., an acorn barnacle (#55w2620), Recent. Why are both of these considered arthropods?

What is the major difference between the way these two species are attached to the substrate?

- 13. Megabalanus tintinnabulum (Plio-Pleistocene, Tobago). How was this attached to the substrate?.
- 14. *Ceratoconcha* sp. (#GL21A/P10/11), late Pleistocene, Falmouth Formation, Jamaica. What type of organism forms the substrate or living space for this barnacle?