

② Short Note — Cycas leaflet characters

- 1) The leaflets shows a distinct midrib and the wings.
- 2) The midrib is swollen, white wings on the lateral sides are narrower and flattened.
 - a) In *C. revoluta* midrib is less projected on the upper side.
 - b) Margins of wings are revolute in *C. revoluta* and *C. beddomei* while they are straight in *C. circinalis*, *C. sumphii*, *C. pectinata* and *C. siamensis*.
- 3) Upper epidermis is present on the upper side. It is thickly cuticularised and single-layered.

Teacher's Signature :

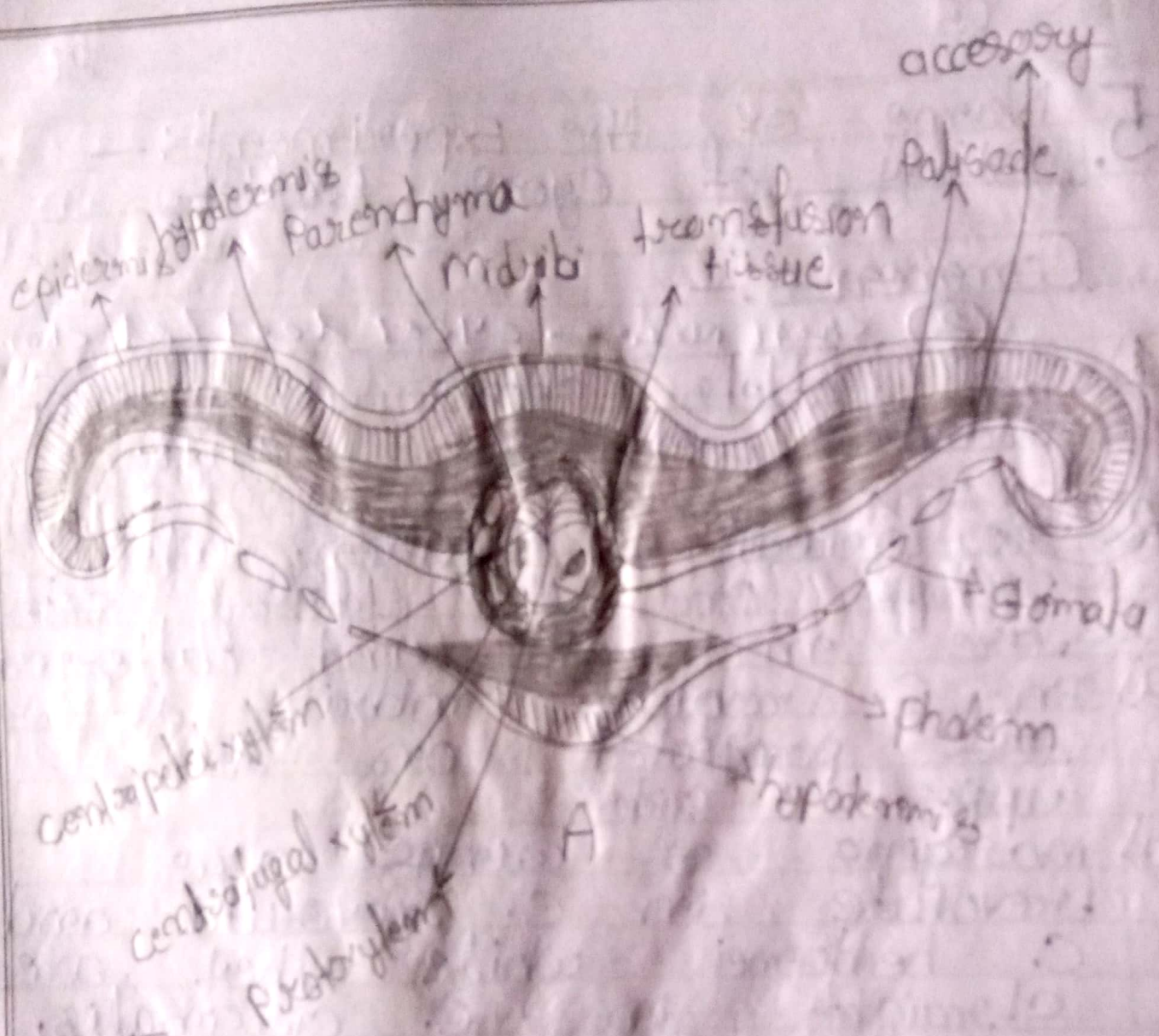


Fig: - Cycas A and B. T.S of bifacial leaf

4) Hypodermis is present below the epidermis. It is sclerenchymatous.

a) In *C. scabulata*, hypodermis is present in the midrib and wings.

b) In *C. circumalis*, hypodermis in the midrib region is present on both the sides while in the wings.

5) Mesophyll lies below the hypodermis and is well developed.

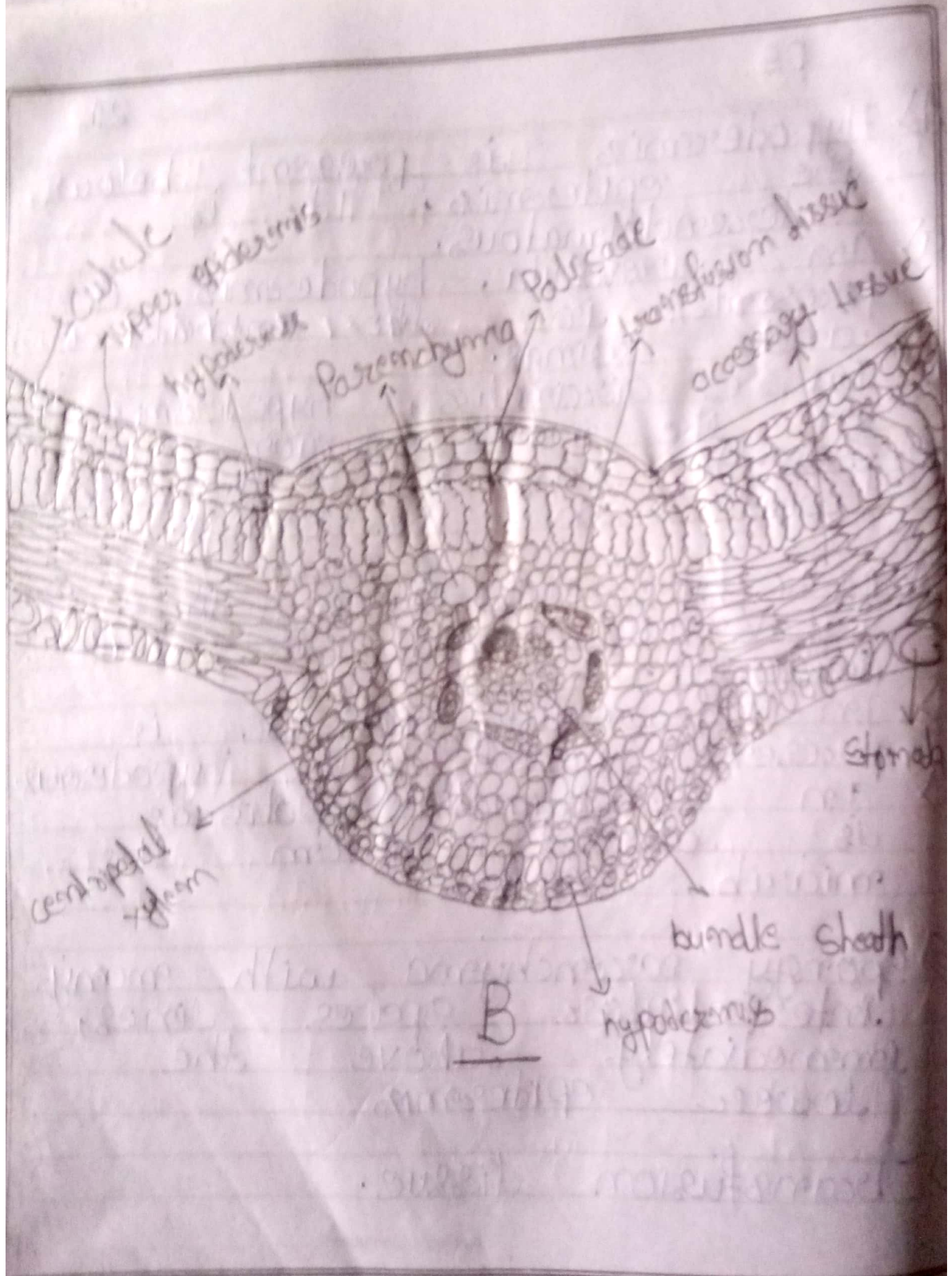
a) In *C. scabulata*, palisade is present beneath the hypodermis.

b) In *C. circumalis*, palisade is absent from the midrib region.

6) Spongy parenchyma with many intercellular spaces, immediately above the lower epidermis.

7) Transfusion tissue.

Teacher's Signature :



- 8) Accessory transpiration tissue.
- 9) Lower epidermis bounds the leaflet from lower side.
- 10) Stomata are very much sunken in the lower epidermis.
- 11) Medial bundle.
- 12) The vascular bundle is similar in all respects to that found in the upper region of the rachis.
- 13) phloem lies towards the basal side - In between xylem and phloem, cambium is present.
- 14) Xylem - It shows a large, triangular patch of centripetal xylem and two small groups of centripetal protoxylem.

Teacher's Signature :