Plate 4.1. *Combretum albidum* G.Don. A. Habit; B. Woody stem; C. Flowering twig; D. Flowering plant; E. Fruiting twig
Plate 4.2. *C. albidum* A. Stem bark; B. Dried pieces of stem bark
Plate 4.3. Microscopy of CaSB. A & B. TS of bark showing cork and phloem region x 40 & x 100. C & D. Histochemical test for lignin x 400 & x 100. E. Histochemical test for oil globules; F. Histochemical test for starch x 400. G. Histochemical test for tannin deposits in the phloem parenchyma and medullary rays x 400.

Abbreviations: ck, cork; og, oil globules; phf, phloem fibres; prcr, prismatic crystals of calcium oxalate; sg, starch grains; tc, tannin contents.
**Plate 4.4.** Powder microscopy of CaSB. **A & B.** Surface view of cork cells; **C.** Groups of stone with wide lumen; **D.** Prismatic crystals of calcium oxalate; **E.** Fibres with reticulate thickening; **F & G.** Yellowish brown tannin content; **H & I.** Stone cells; **J.** Tannin masses; **K.** Group of pitted parenchyma; **L.** Fragment of fibre; **M.** Cortical parenchyma containing tannin; **N & O.** Groups of crystal fibres; **P.** Starch grains; **Q.** Cortical parenchyma containing oil globules.
Plate 4.5. Polarization microscopy of CaSB. A. TS showing cork and phloem region x 100; B. Cork region x 400; C. Phloem region showing stone cells and prismatic crystals of calcium oxalate x 400; D. Phloem fibres x 400; E. Prismatic crystals of calcium oxalate x 400. ck, cork; phf, phloem fibre; prcr, prismatic crystals of calcium oxalate; stc, stone cell
Plate 4.6. Fluorescent microscopy of CaSB. 

A & D. TS showing cork and phloem region x 100;  
B. Cork region and phloem region x 200;  
C. Cork region showing thickened wall x 400;  
E. Phloem region showing phloem fibres and prismatic crystals of calcium oxalate x 400.  

ck, cork; phf, phloem fibres; prcr, prismatic crystals of calcium oxalate
Plate 4.7. *C. albidum*. Dried pieces of Heart wood
Plate 4.8. Microscopy of CaSHW. A & B. TS x 100 & x 400. C. TS showing prismatic crystals of calcium oxalate in xylem parenchyma x 400; D, G & J. Histochemical test showing tannin deposits; E, H & K. Histochemical test for starch deposits x 400. F-H. RLS x 400; I-K. TLS. prcr, prismatic crystals of calcium oxalate; sg, starch grains; tc, tannin contents; v, vessel.
Plate 4.9. Powder microscopy of CaSHW. a & f. Fragment of crystal fibers; b. Starch grains; c. Prismatic crystals of calcium oxalate; d & e. Fragments of bordered pitted vessels; g. Fragment of parenchyma cells embedded with starch grains; h. Stone cell.
Plate 4.10. Polarization microscopy of CaSHW. A. TS showing wood region x 40; B. Prismatic crystals of calcium oxalate x 100; C. Wood region showing prismatic crystals of calcium oxalate x 400. prcr, prismatic crystals of calcium oxalate; xpa, xylem parenchyma.
Plate 4.11. Fluorescent microscopy of CaSHW. A. TS showing wood region showing vessel and xylem parenchyma x 100; B. Vessel x 200; C. Xylem parenchyma and xylem fibres x 200; D. Xylem fibres x 400; E. Xylem vessels and fibres. v, vessel; xpa, xylem parenchyma; xyf, xylem fibres.
Plate 4.12. *C. albidum* dried leaves
Plate 4.13. Microscopy of Cal. A. TS 100 X; B-D. Detailed TS of upper, middle and lower portion x 400; E. Detailed TS of lamina x 400; F-G. Upper portion showed peltate hairs and stomata x 400. clcr, cluster crystals of calcium oxalate; col, collenchyma; cu, cuticle; hyp, hypodermis; le, lower epidermis; palisade; perf, pricycle fibres; plh, peltate hairs; ph, phloem; rcr, rosette crystals of calcium oxalate; spme, spongy mesophyll; t, trichome; ue, upper epidermis; xy, xylem.
Plate 4.14. Powder microscopy of CaL. a. Fragments of upper epidermis with peltate hairs and anisocytic stomata; b. Lower epidermis with underlying palisade layer; c. Spiral vessels; d-e. Tannin mass; f. Peltate hair; g-h. Cluster crystals of calcium oxalate; i. Oil globules; j. Fragment of palisade layer; k. Fragment of fibres.
Plate 4.15. Scanning Electron Microscopy (SEM) of CaL. A & B. Lower epidermis showing stomata; C. Group of trichomes near midrib area; D-F. Different types of petlate hairs (plh, petlate hair; s, stomata; t, trichome).
Abbreviations: T1, Track 1; T2, Track 2; T3, Track 3

Plate 4.16. TLC details of petroleum ether extracts of CaSB. A. UV 254 nm; B. UV 366 nm; C. Derivatized with ANS.

Plate 4.17. TLC details of ethyl acetate extracts of CaSB. A. UV 254 nm; B. UV 366 nm; C. Derivatized with ANS.

Plate 4.18. TLC details of methanol extracts of CaSB. A. UV 254 nm; B. UV 366 nm; C. Derivatized with ANS.

Abbreviations: T1, Track 1; T2, Track 2; T3, Track 3
Plate 4.19. TLC details of *petroleum ether* extract of CaSHW. A. UV 254 nm; B. UV 366 nm; C. Dervatized with ANS.

Plate 4.20. TLC details of *ethyl acetate* extract of CaSHW. A. UV 254; B. UV 366; C. Dervatized with ANS.

Plate 4.21. TLC details of *methanol* extract of CaSHW. A UV 254; B. UV 366; C. Dervatized with ANS.

**Abbreviation:** T1, Track 1; T2, Track 2; T3, Track 3
Plate 4.22. TLC details of *petroleum ether* extract of CaL. A. UV 254 nm; B. UV 366 nm; C. Derivatised with ANS.

Plate 4.23. TLC details of *ethyl acetate* extract of CaL. A. UV 254; B. UV 366; C. Derivatised with ANS.

Plate 4.24. TLC details of *methanol* extract of CaL. A UV 254; B. UV 366; C. Derivatised with ANS.

T1, Track 1; T2, Track 2; T3, Track 3
**Plate 4.27.** HPTLC profile of *C. albidum* A-C stem bark; D-F heart wood; G-I leaf; J-N Gallic acid standard (254 nm).

**Plate 4.28.** HPTLC profile of *C. albidum* A-C stem bark; D-F heart wood; G-I leaf; J-N Gallic acid standard (White RT after derivatised with Ferric chloride reagent).
Morphological changes at 48 hrs

Plate 4.29. Morphological changes on Hep3B cells after 48 hrs treatment with 200µg/ml of stem bark extracts; 1, Normal Control; 2, DMSO (0.1% v/v); 3, Silymarin (50µg/ml); 4, CA-Hex; 5, CA-H2O; 6, CA-EtOH extracts (200µg/ml).

Hoechst staining

Plate 4.30. Morphological changes of DNA chromatin on Hep3B cells detected by Hoechst staining; 1, Normal Control, 1a, Normal nucleus; 2, DMSO (0.1% v/v); 3, Silymarin (50µg/ml), 3a, fragmented nucleus; 4, CA-Hex; 5, CA-H2O; 6, CA-EtOH extracts (200µg/ml).

RESULTS