



# **Field and Taxonomic Identification of Cycad Aulacaspis Scale**

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# Cycad Aulacaspis Scale (CAS)



Dr. Ross Miller

# CAS

- *Aulacaspis yasumatsui* Takagi
- Found in Miami in 1996.
- Females produce more than 100 eggs.
- Hatch into crawlers within 14 days.
- Roughly 35-40 days to new generation.
- **Commonly confused with false oleander scale.**

# CAS

- Systematics

Hemiptera (Order)

Coccoidea (Superfamily)

Diaspididae (Family)

Diaspidinae (Subfamily)

*Aulacaspis yasumatsui*

The background of the slide is a dark green color with a pattern of lighter green, stylized leaf shapes. The leaves are arranged in a way that they appear to be overlapping and growing from the bottom left towards the top right. The text "Field Identification" is centered in the middle of the slide in a bold, yellow, serif font.

# **Field Identification**



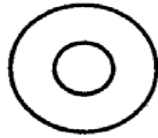
# Diaspidinae Armored Scales

## Field Specimens

- Armor:
  - Made of previous cast skins and secreted waxes.
  - Aids in protection.
- Adult females: Legless, located underneath armor
  - Armor will look similar to a white teardrop with a golden to brown apex.

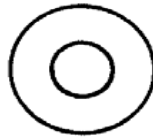
### Aspidiotine cover development

Female

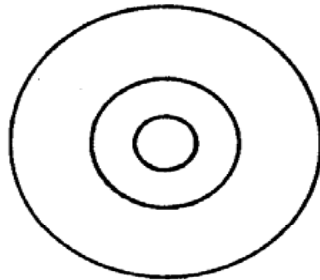


A

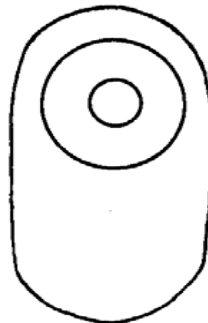
Male



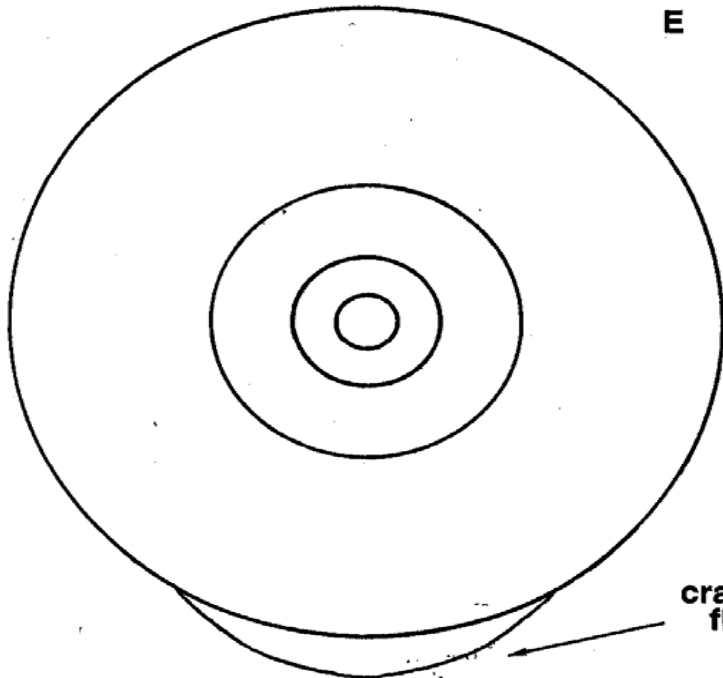
D



B



E



C

### Diaspidine cover development

Female



F

Male



I



G



J



K



H

crawler  
flap

Shed exoskeleton, will  
appear golden to brown.

Wax cover will be  
white.

JAD

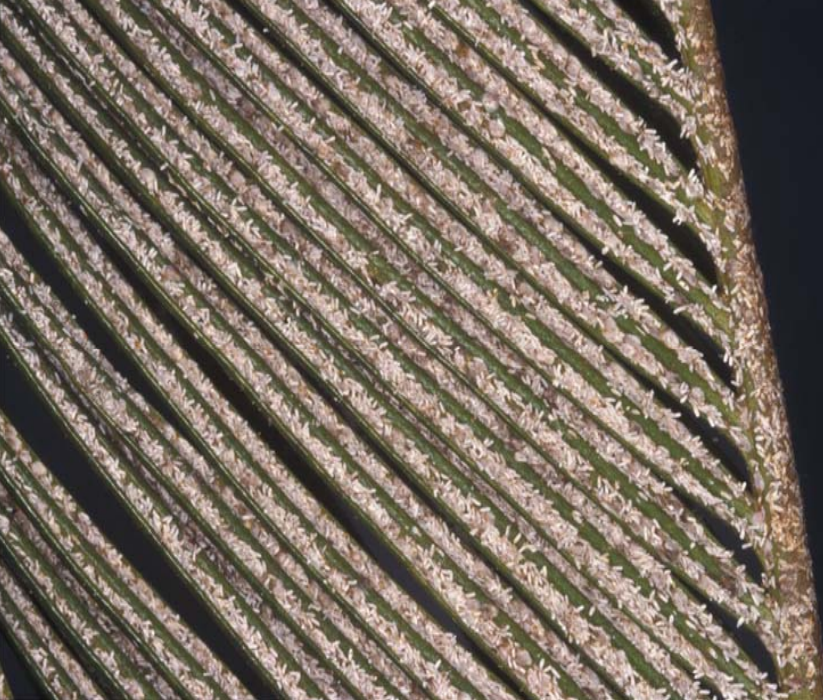












cycad  
aulacaspis  
scale



magnolia  
white scale





***Pseudaulacaspis cockerelli* (False Oleander Scale)**

**Looks very similar to CAS but the female cover is generally more oyster-shell shaped and the wax portion of the cover tends to appear thicker than that of CAS.**

The background of the slide is a dark green color with a pattern of lighter green, stylized leaf shapes. The leaves are arranged in a way that they appear to be overlapping and growing from the bottom left towards the top right.

# **Taxonomic Identification**



# *How are Scale Insects Identified?*

- Some may be tentatively identified in the field using characteristics of: shape of female, shape of female or male armor, shape of male, host, and feeding location on host.
- Most specimens must be slide-mounted for confirmatory diagnosis.
- Most taxonomic keys rely on the *Adult female* life stage.

# Diaspidine morphology

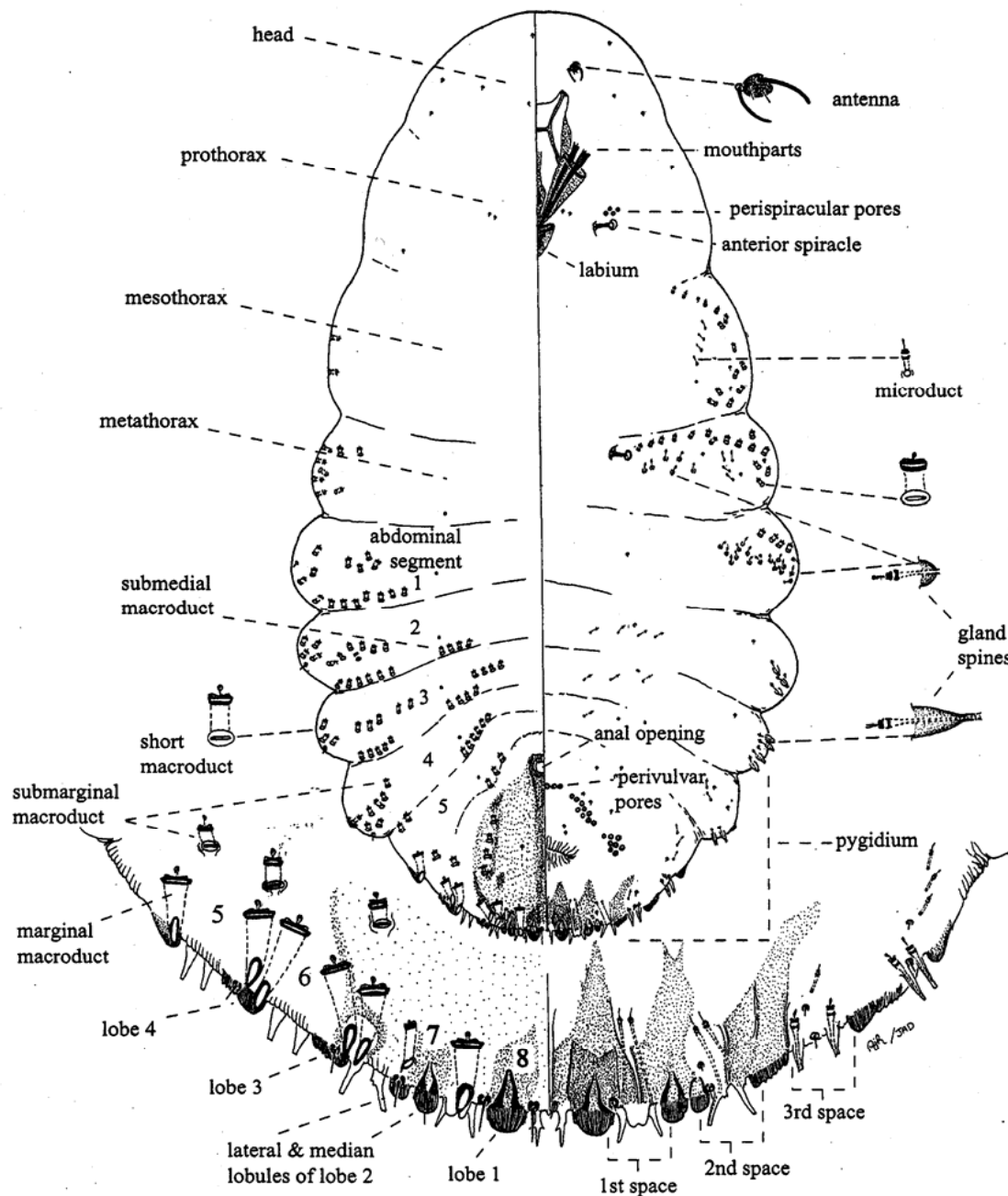


Figure 4. General morphology of slide-mounted adult female diaspidine.

## Key Characters

- Gland Spines
- Macroducts
- Lobes
- Perivulvular Pores



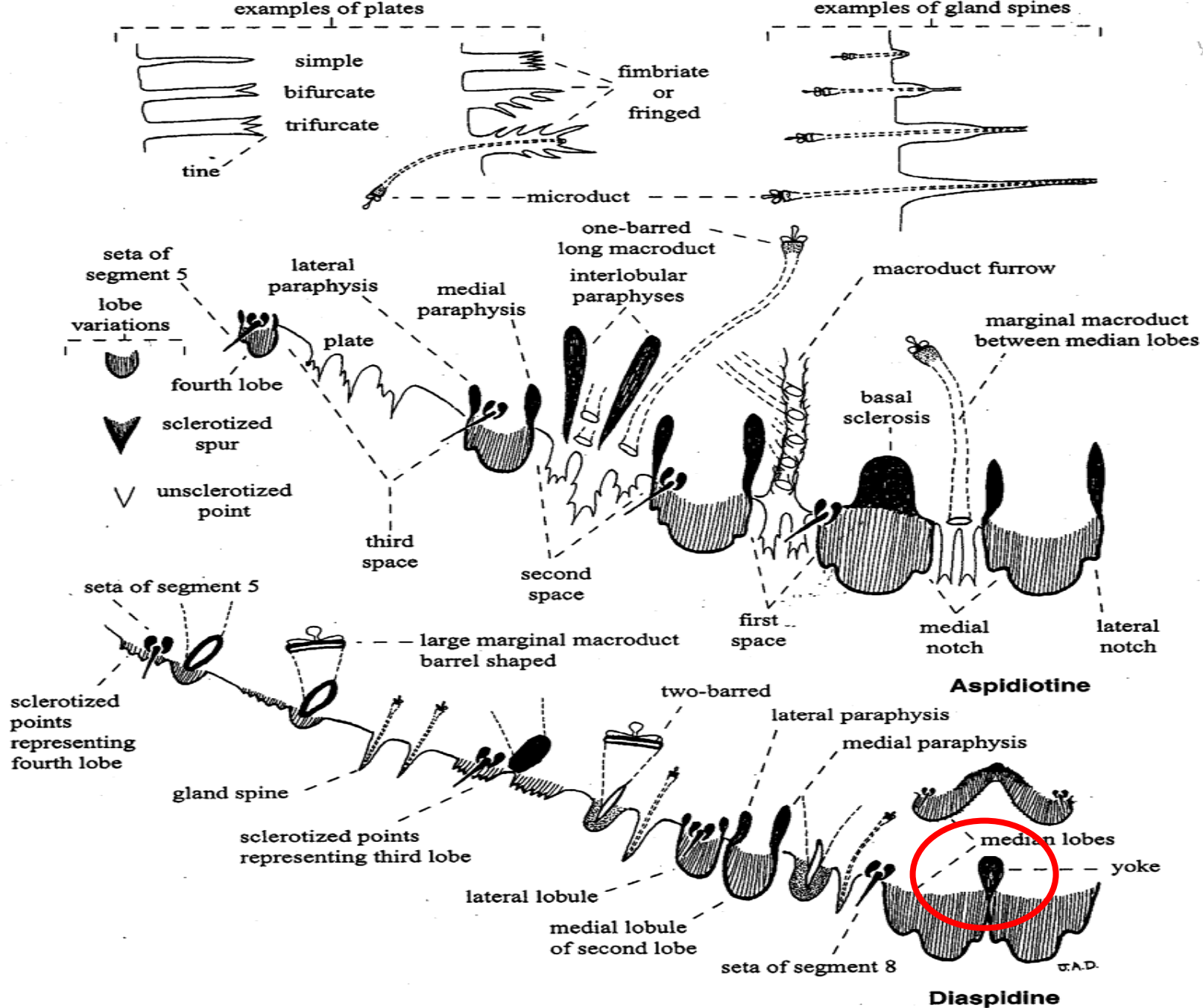


Figure 5. General morphology of pygidial margin.

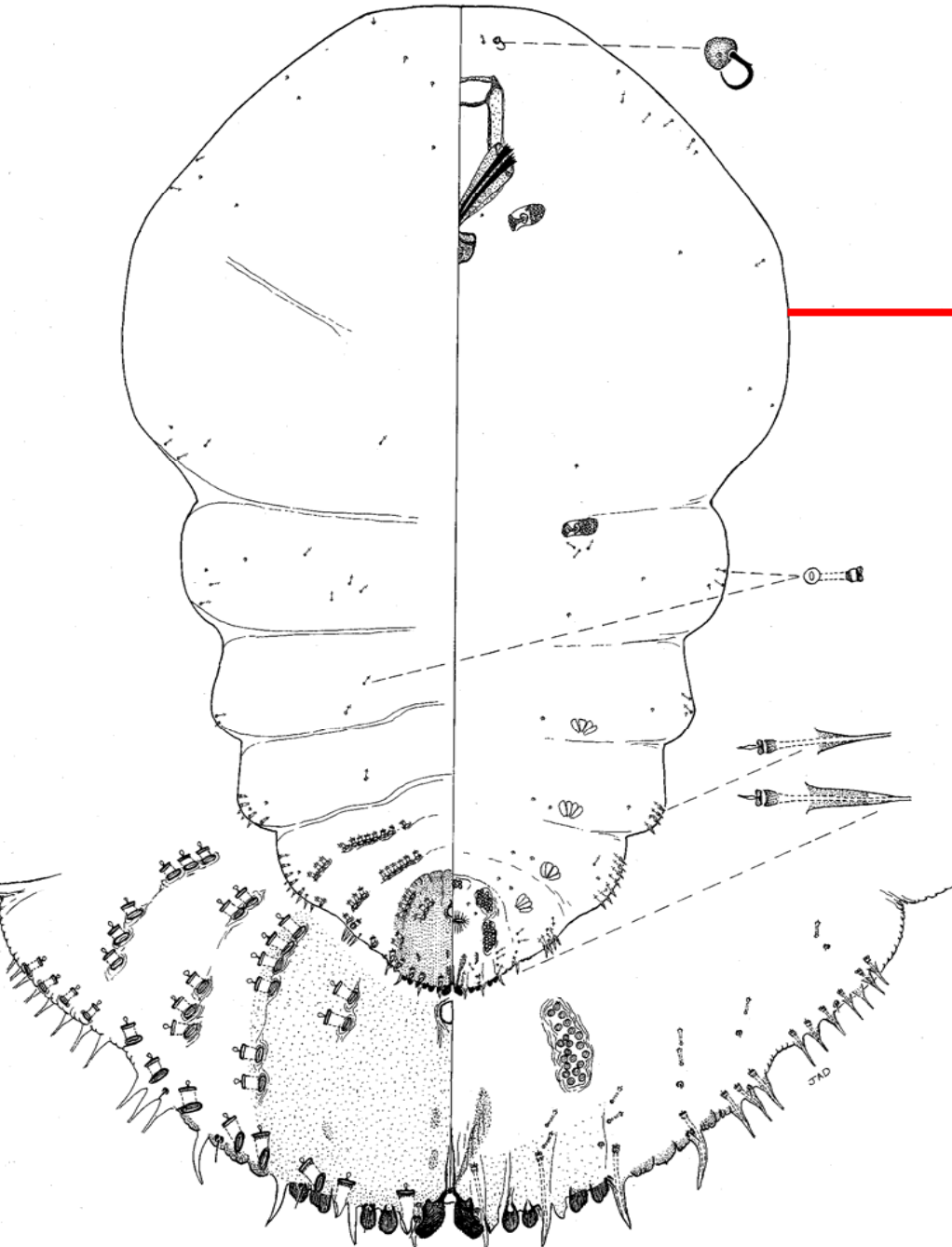
# Key Characters for CAS and False Oleander Scale

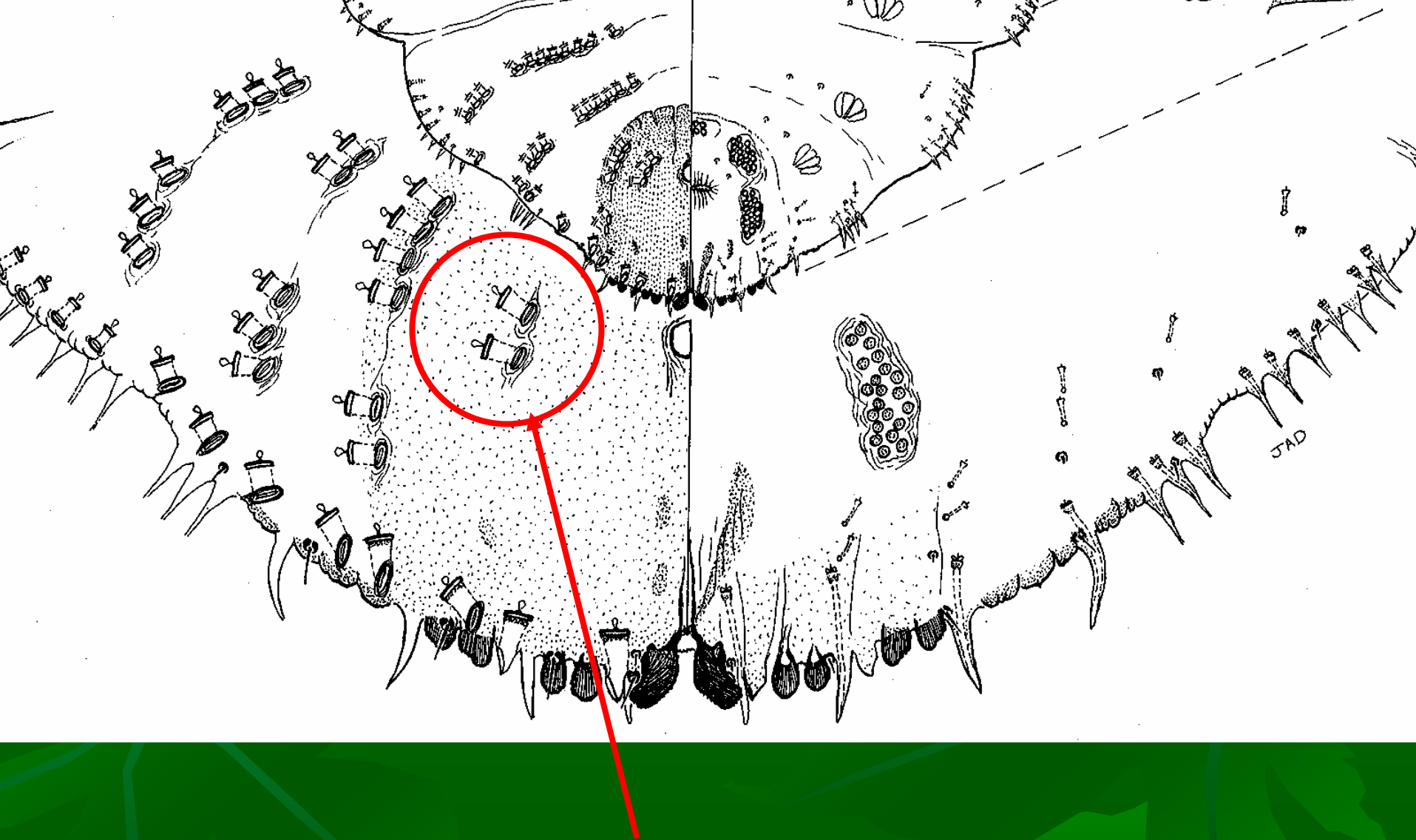
Character	CAS	False Oleander Scale
Median Lobes Yoked Together	Yes	Yes
Thorax and Head Wider than Abdomen	Yes	No
Somewhat Elongate Body Shape	No	Yes



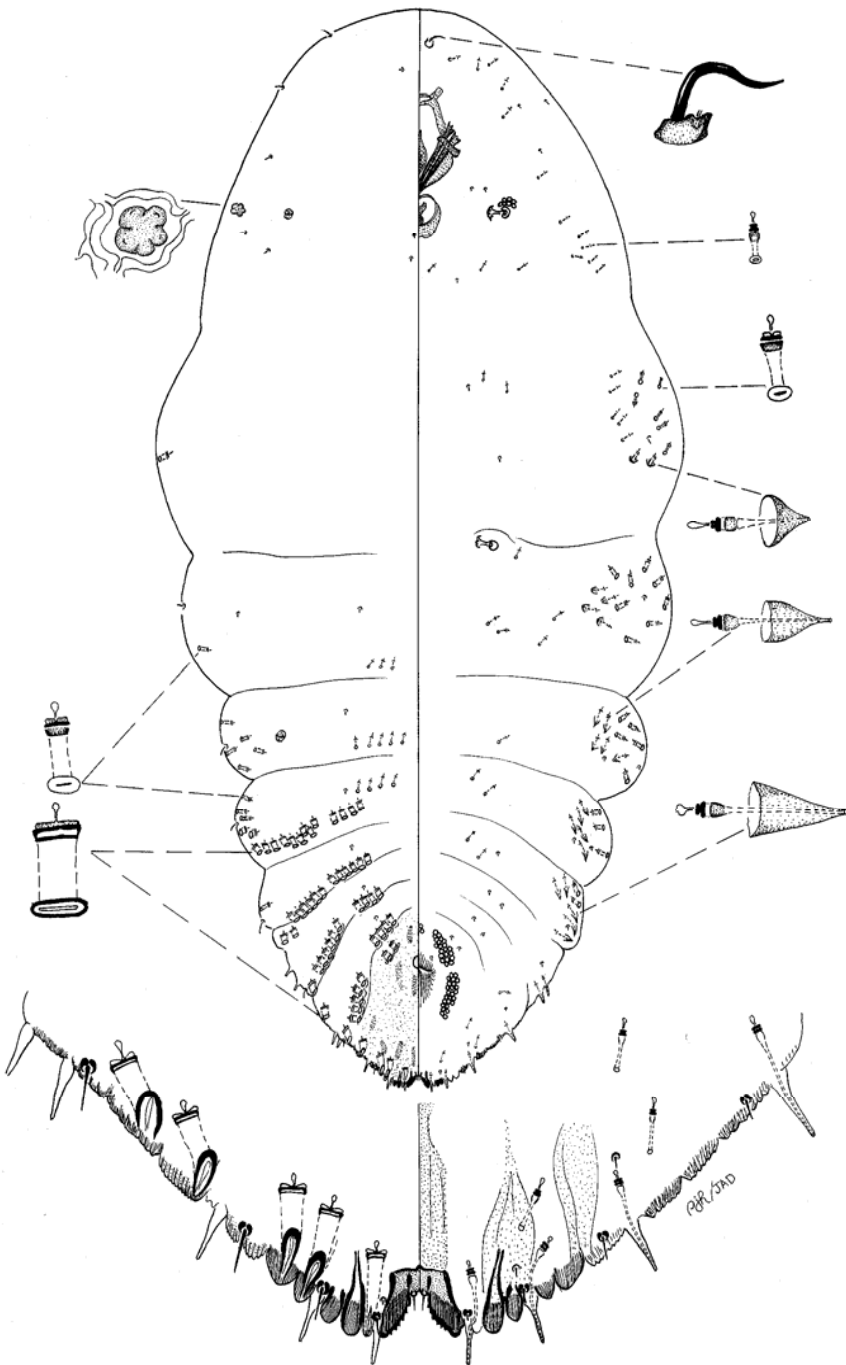
*Aulacaspis yasumatsui*

Rectangular shaped head  
and thorax





Two, two barred ducts present in illustration. However, there is a range in the original description of 1-3 ducts present in this area.



*Pseudaulacaspis cockerelli*  
(Cooley)

Wide host range, common on  
*Cycas revoluta* in Florida.

Distribution (outdoor): AL, AR,  
FL, GA, HI, LA, TX





This is a detailed scientific illustration of a fossilized insect, likely a fly, shown in a split view (dorsal and ventral) with various anatomical parts labeled with letters and numbers. The illustration includes the head, thorax, abdomen, and legs, with detailed views of the mouthparts, wings, and genitalia.

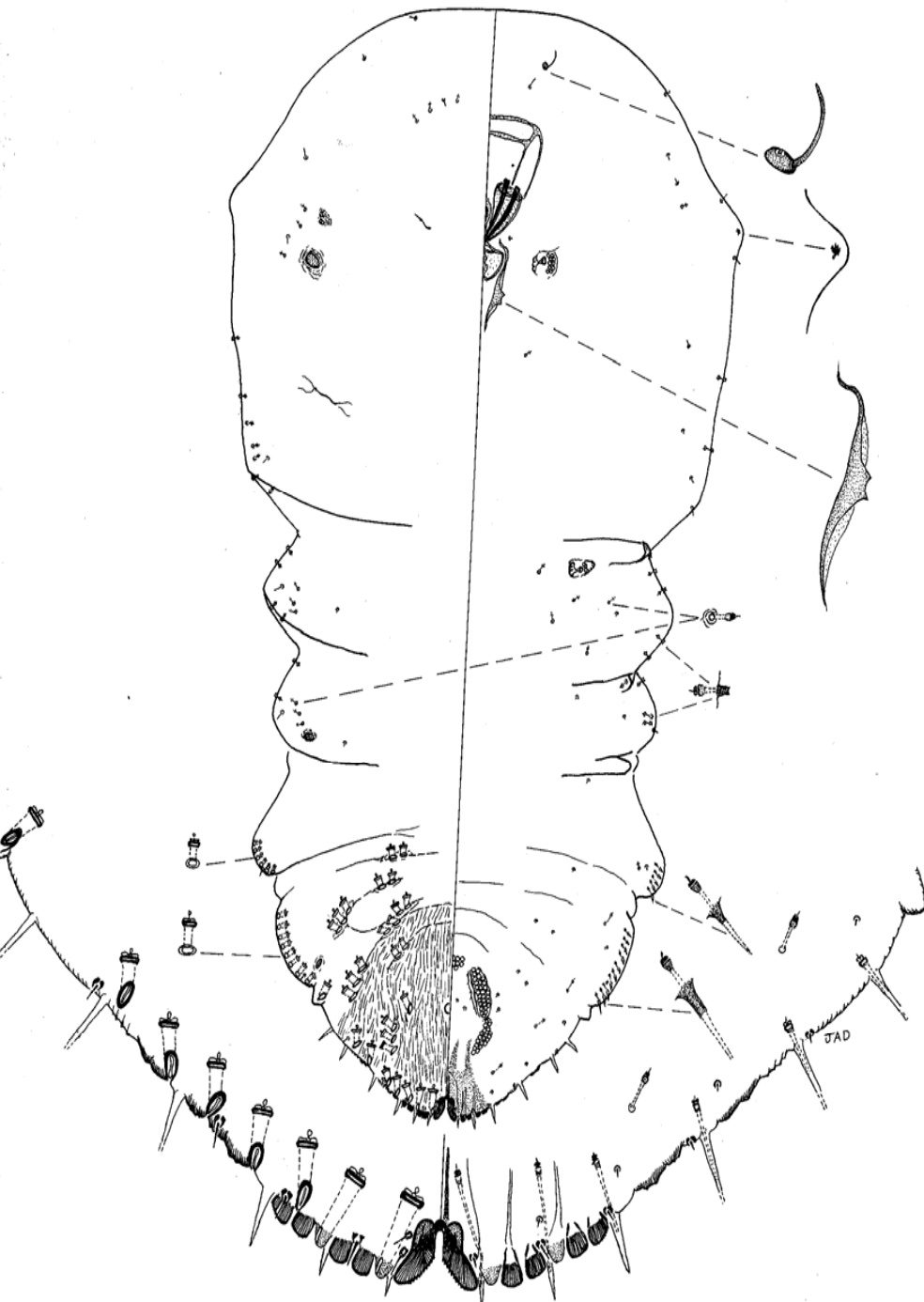
The main body is divided vertically into two halves. The left half shows the dorsal view, and the right half shows the ventral view. The head is at the top, with large compound eyes and antennae. The thorax is in the middle, showing the wings and the base of the legs. The abdomen is at the bottom, showing the genitalia and the base of the legs. Various parts are labeled with letters and numbers, and dashed lines connect these labels to detailed views of the parts. These detailed views include:

- Head and Antennae:** Labels A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GG, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LL, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NN, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TT, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UU, UV, UW, UX, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WW, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YY, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ.

Distribution: AR, CA, CT, DC,  
FL, GA, IA, IL, IN, KS, KY, LA,  
MA, MD, MI, MO, MS, NC, NH,  
NJ, NM, NY, OH, OR, PA, SC,  
TX, UT, VA, WA, WY, WV



R.J. Gill



*Aulacaspis tubercularis*  
Newstead

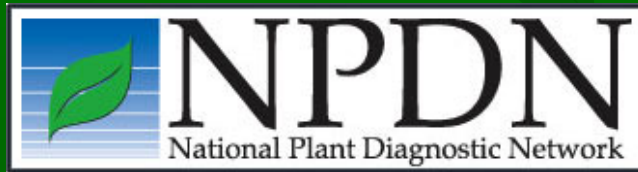
Polyphagous but not a  
common species.

Distribution: FL



# Questions???

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