



CRC

for

Premium

Quality

Wool

Stages in the Formation of the Cuticle

Produced for the CRC for Premium Quality Wool undergraduate program by;
Dr. Les Jones, CSIRO Textile & Fibre Technology.



Formation of the fibre cuticle

- fibre cuticle cells are derived from follicle bulb
- these are enclosed by IRS cells and ORS cells
- fibre cuticle cells undergo changes in cell shape, protein synthesis and cross linkages

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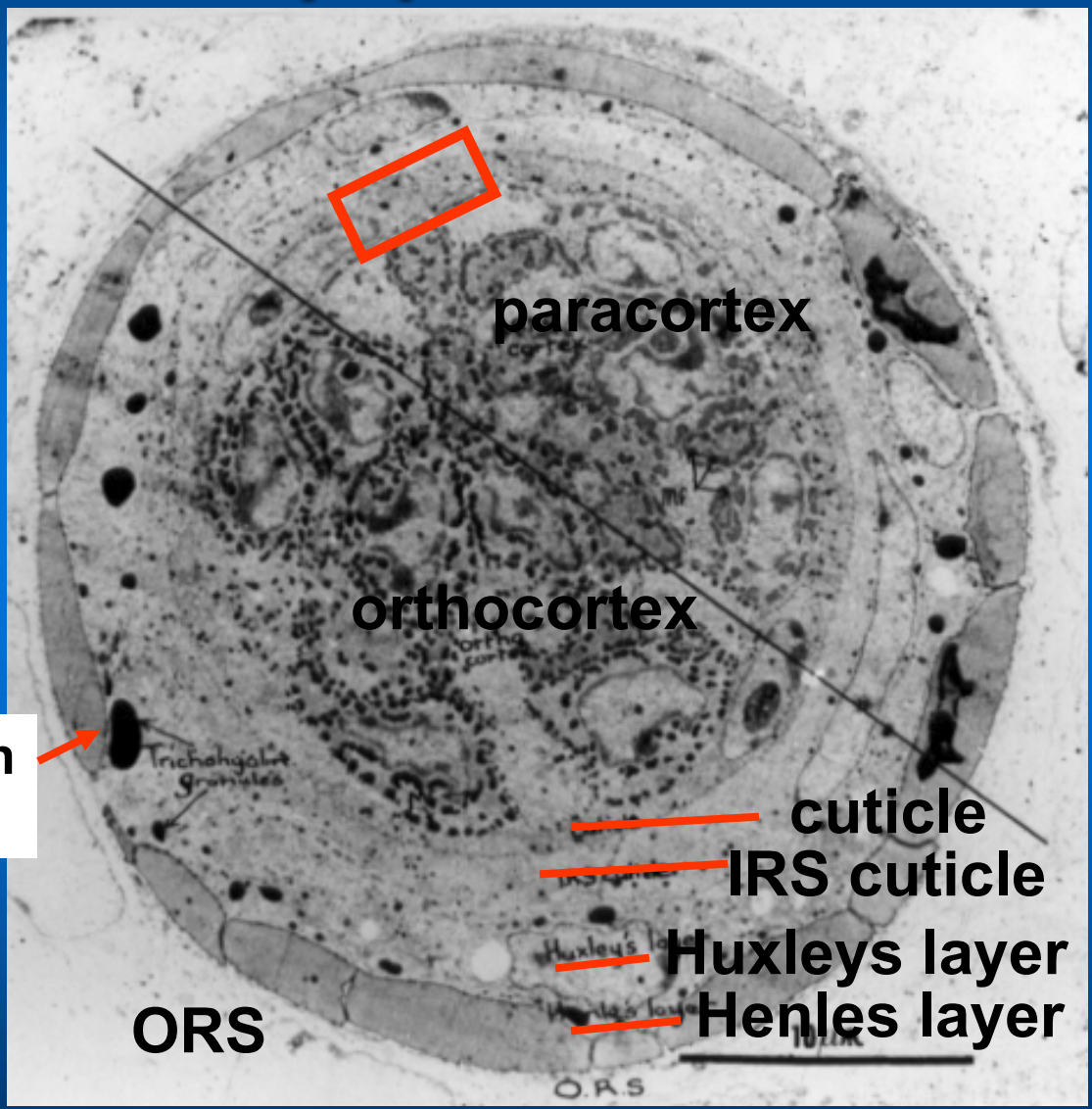
Wool



Section through bulb region above dermal papilla.

- cellular detail of fibre cells and IRS & ORS

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Trichohyalin granules



paracortex

orthocortex

cuticle

IRS cuticle

Huxleys layer

Henles layer

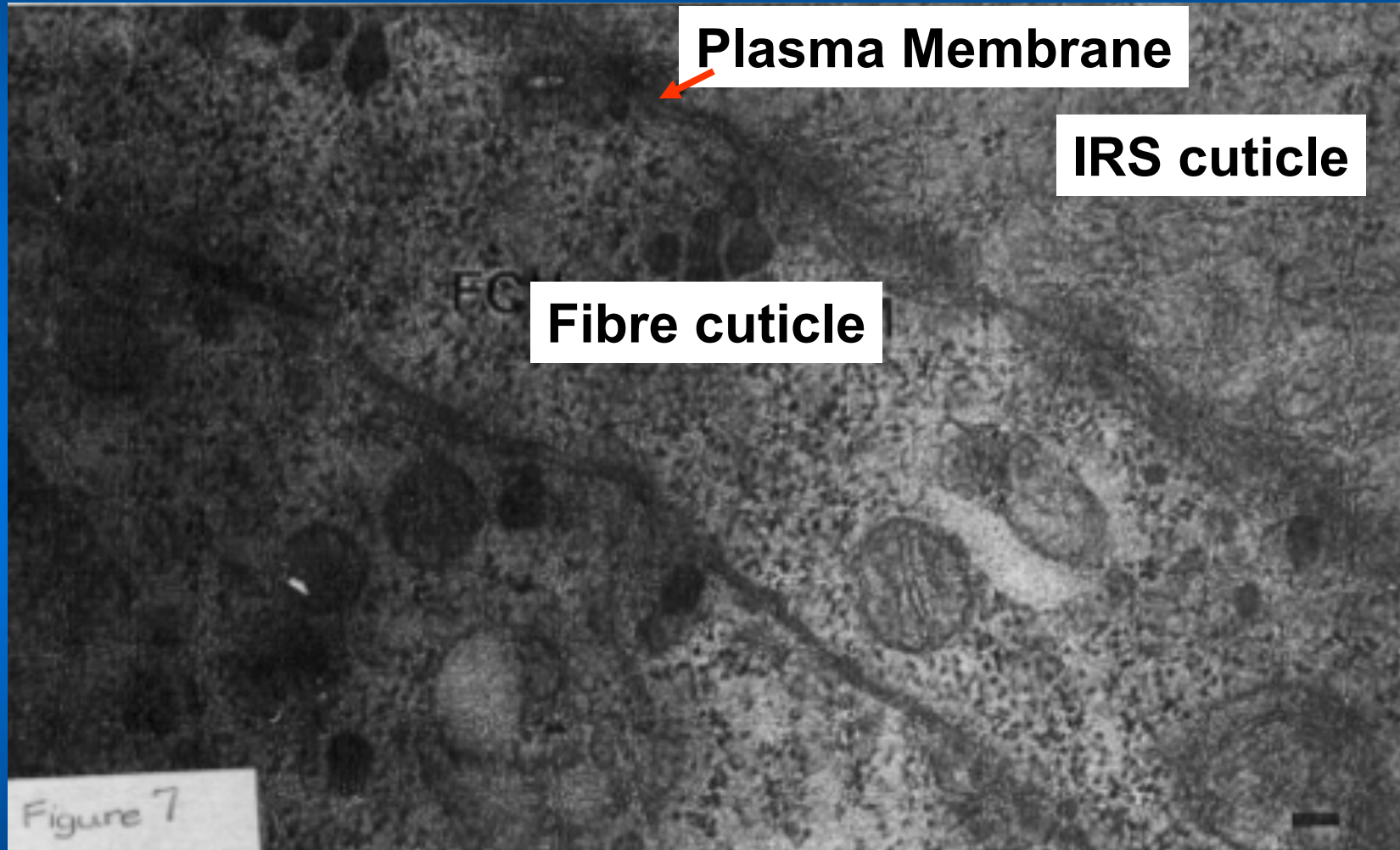
ORS

ORS





Higher magnification of fibre/IRS interface at the supra-bulbar level.



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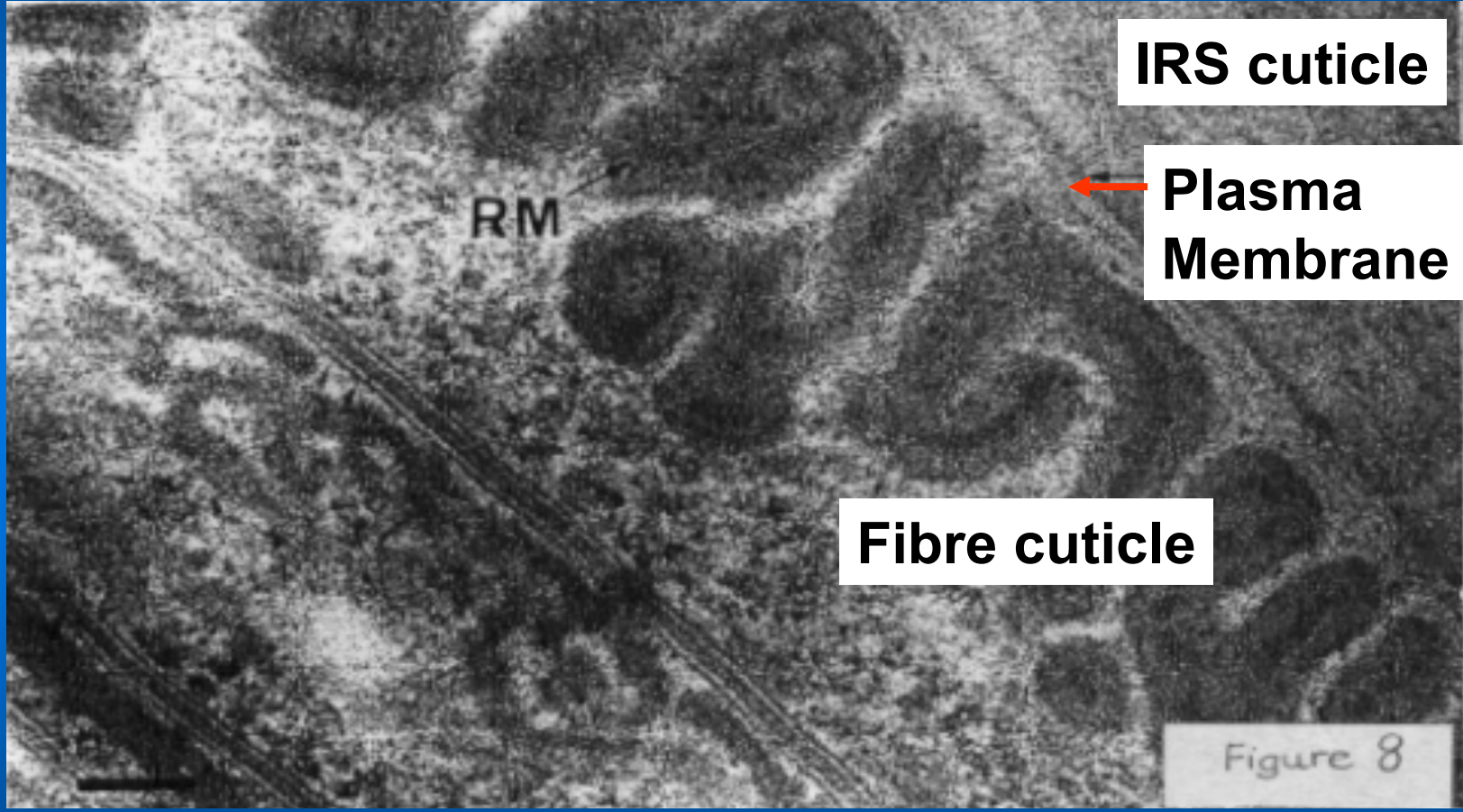
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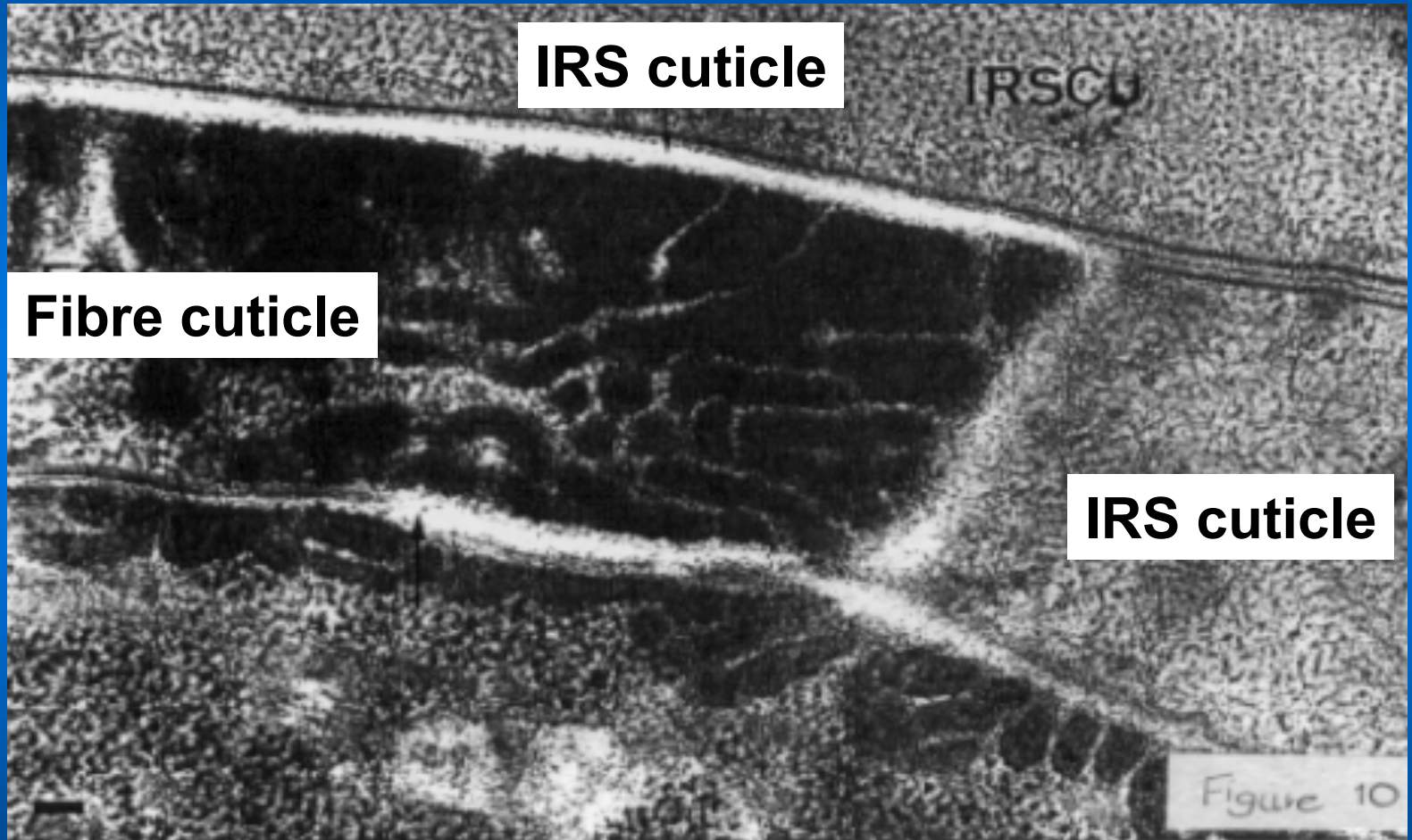
Above the bulb



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Even further up the follicle



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Same level as previous slide but different degree of differentiation

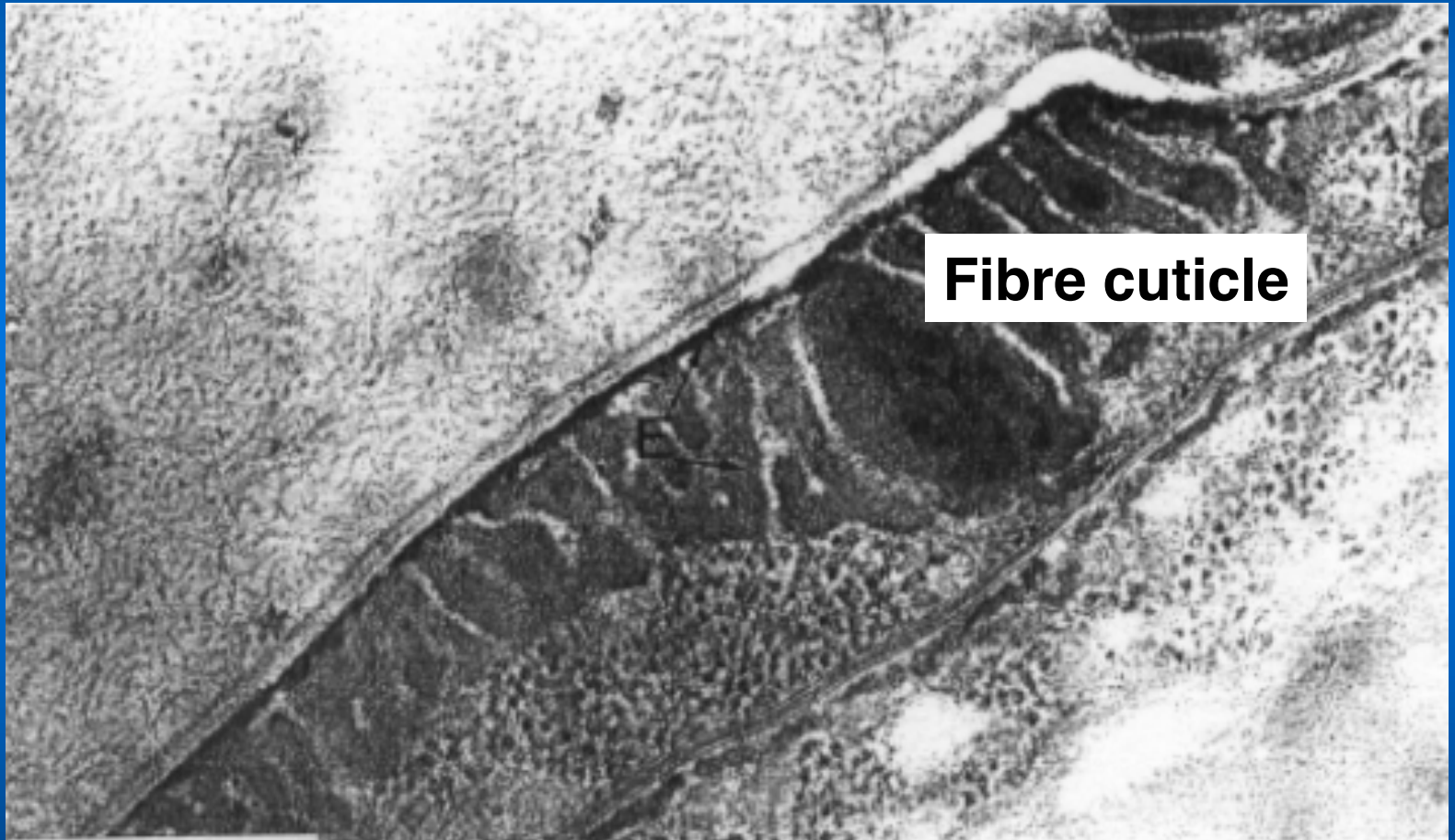
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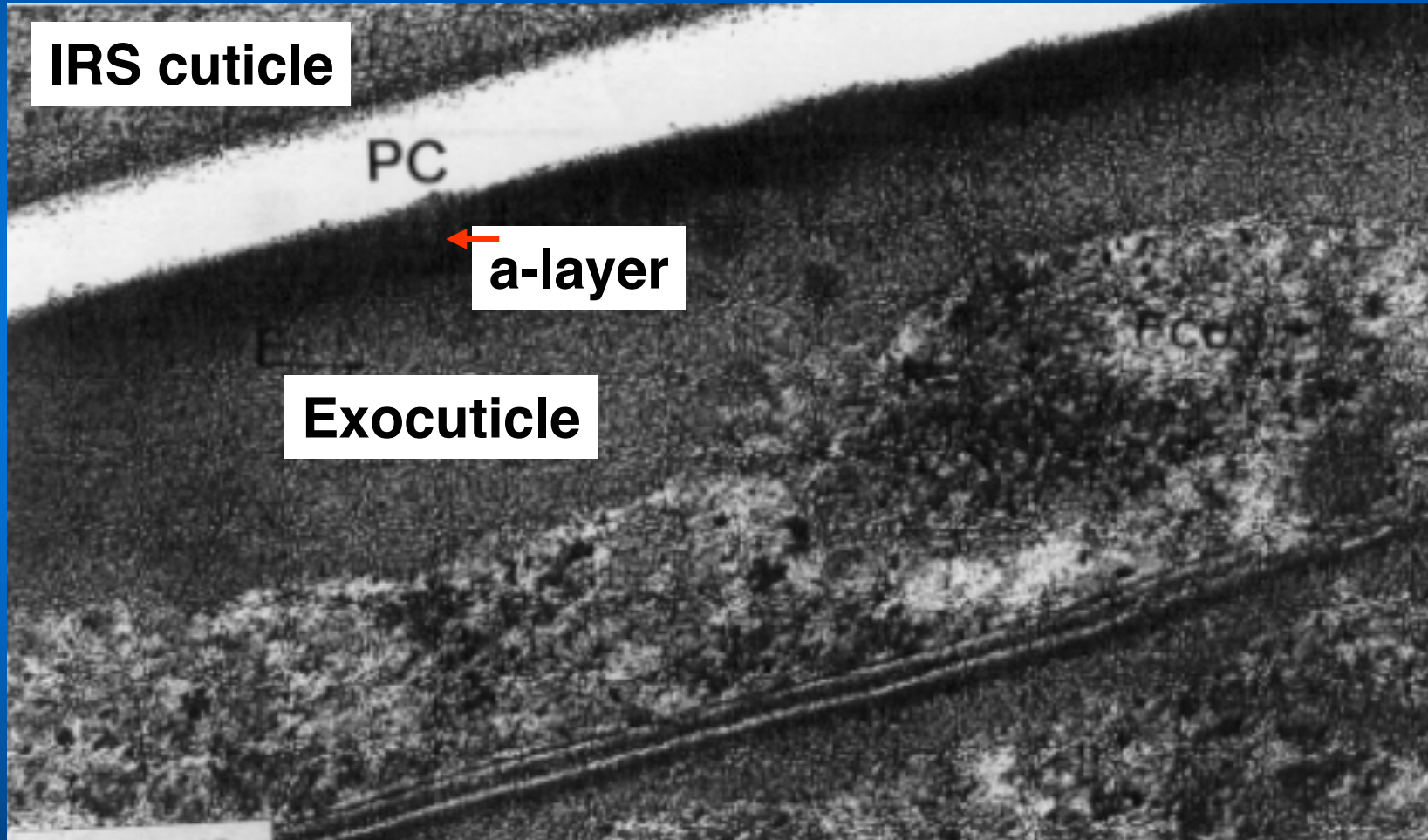
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Complete separation of the fibre from the inner root sheath



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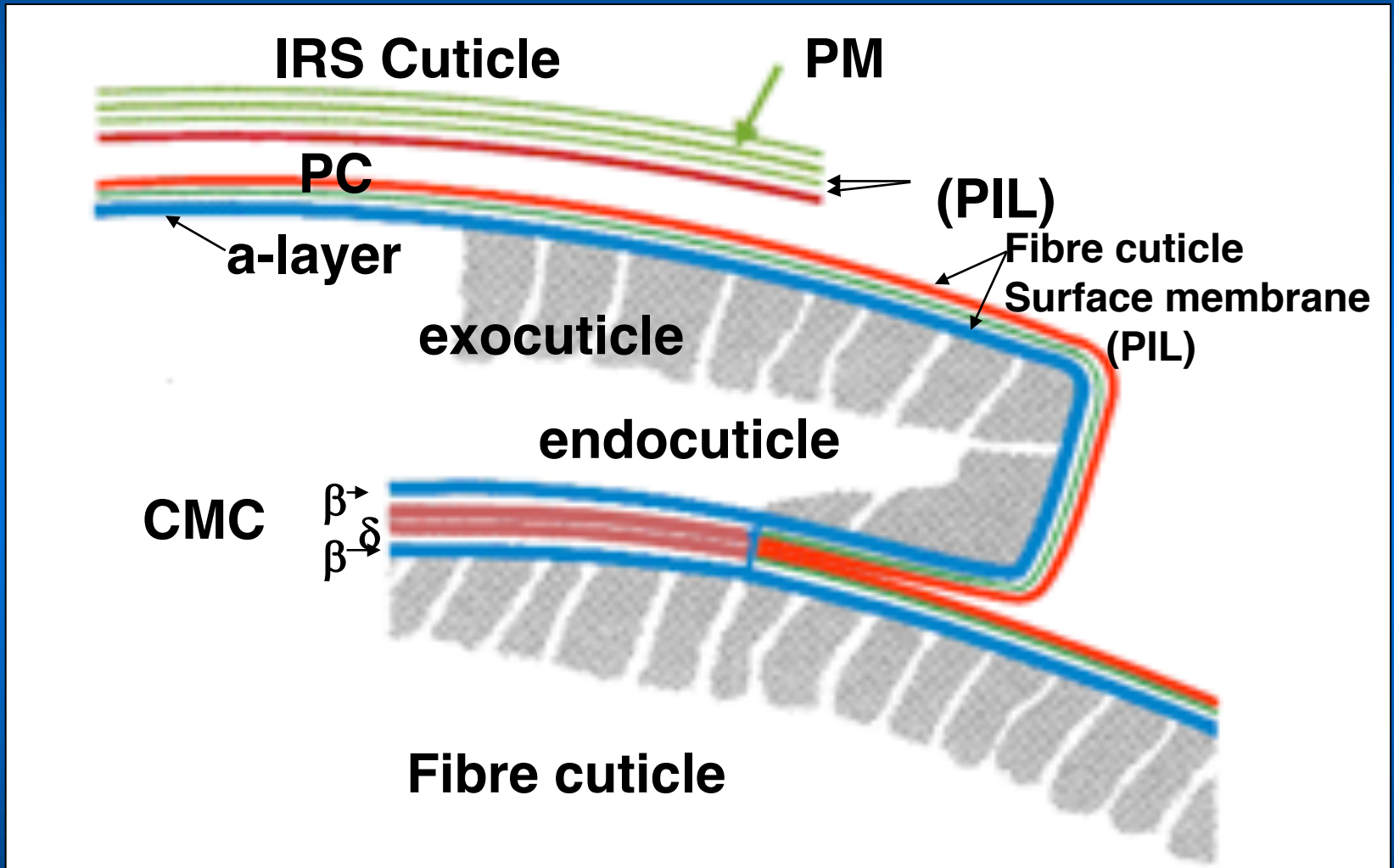
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Model of fibre cuticle formation



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