



CRC

for

Premium

Quality

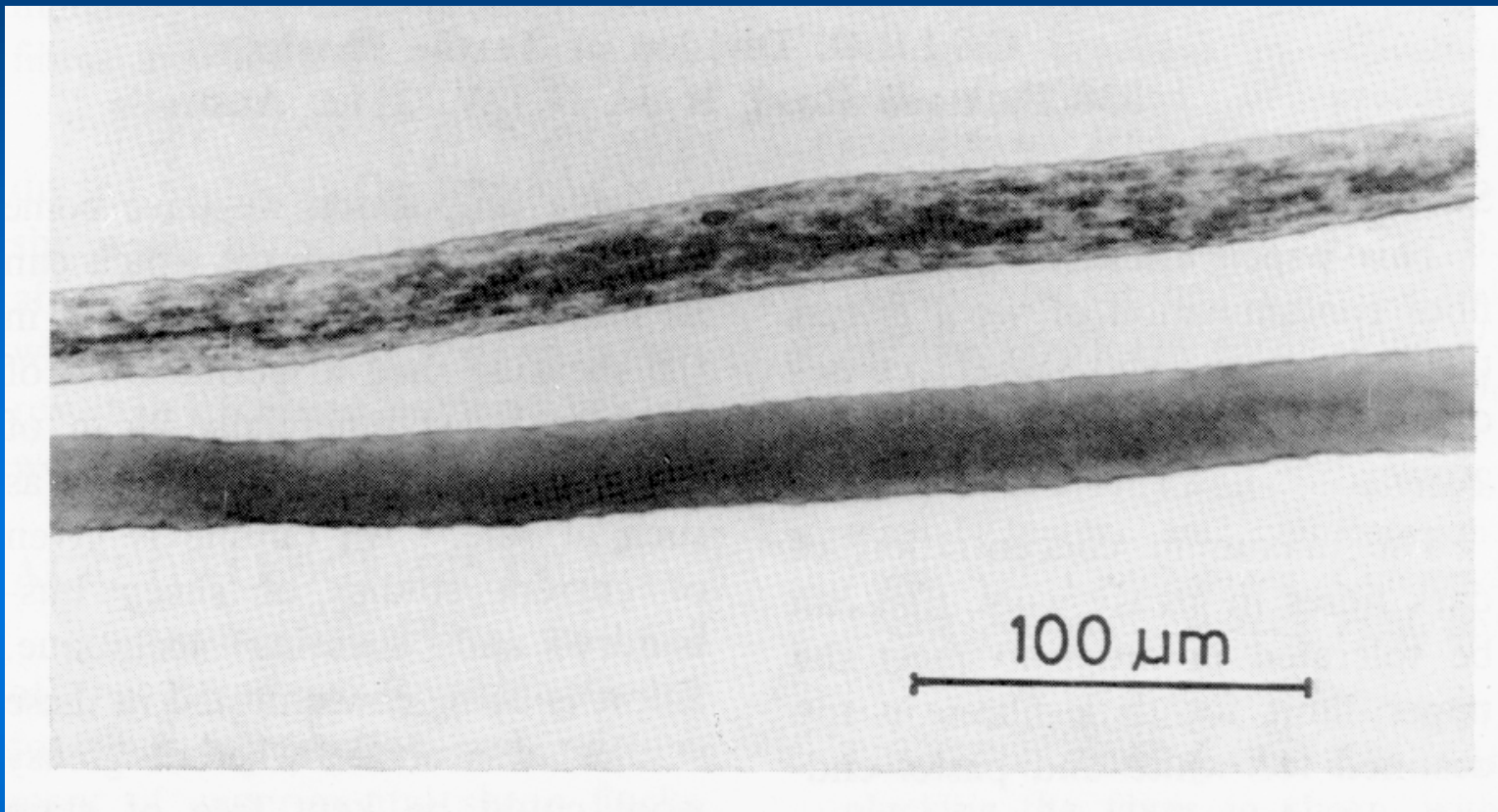
Wool

Dark Fibre Medullated Fibre

Produced for the CRC for Premium Quality Wool undergraduate program by;
Dr. Peter Auer, The University of New South Wales.



Dark Fibres



- **Pigmented & Urine Stained**
 - Which is most common?
 - What do they look like?

Peter Auer

Source: Foulds, R. A. et al. (1984)

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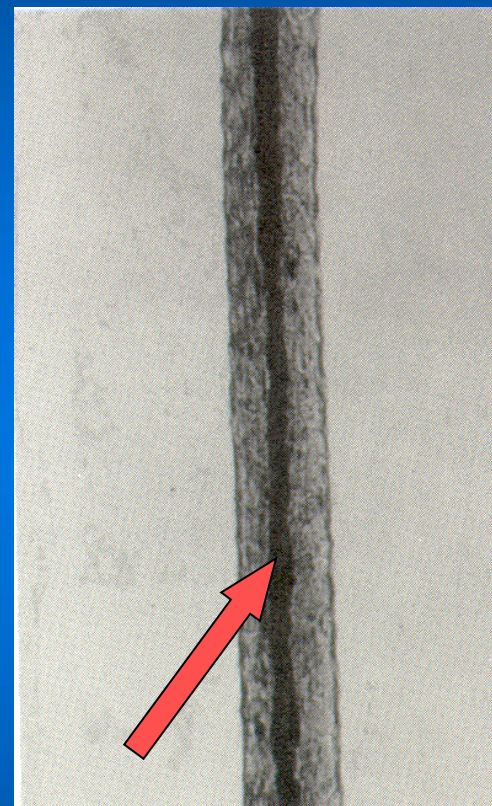
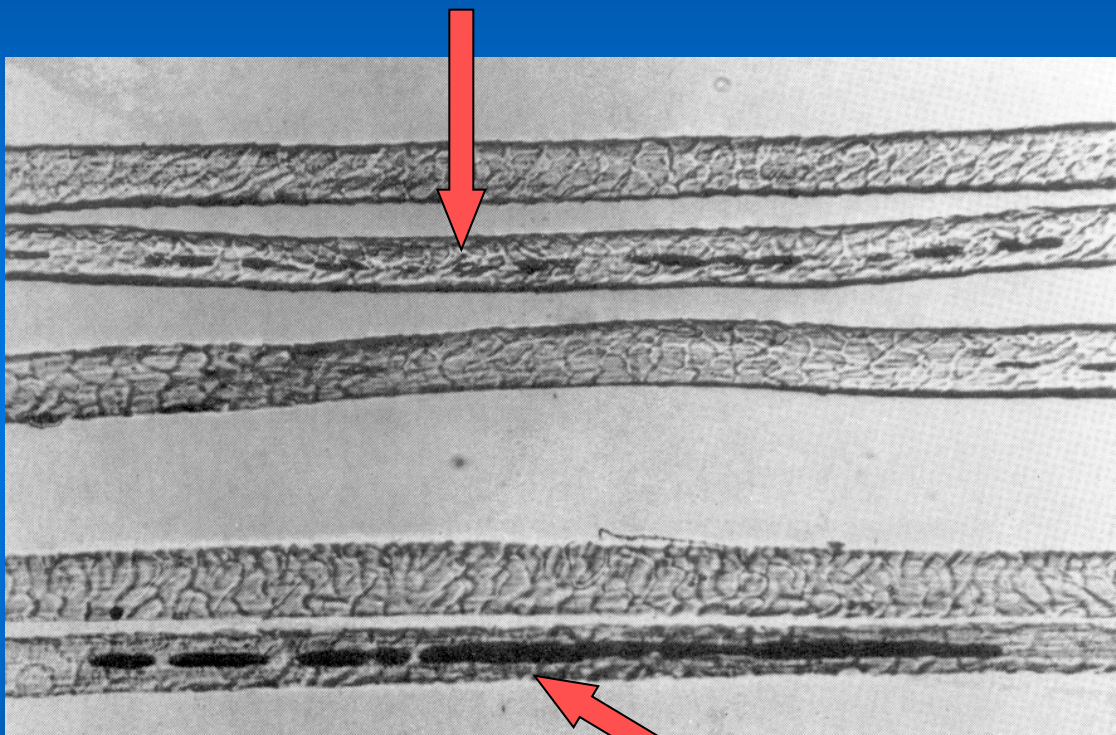
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Medullated Fibres

Wool Fibres with segmented medullation



coarse fibre
sparsely pigmented with
a continuous medulla

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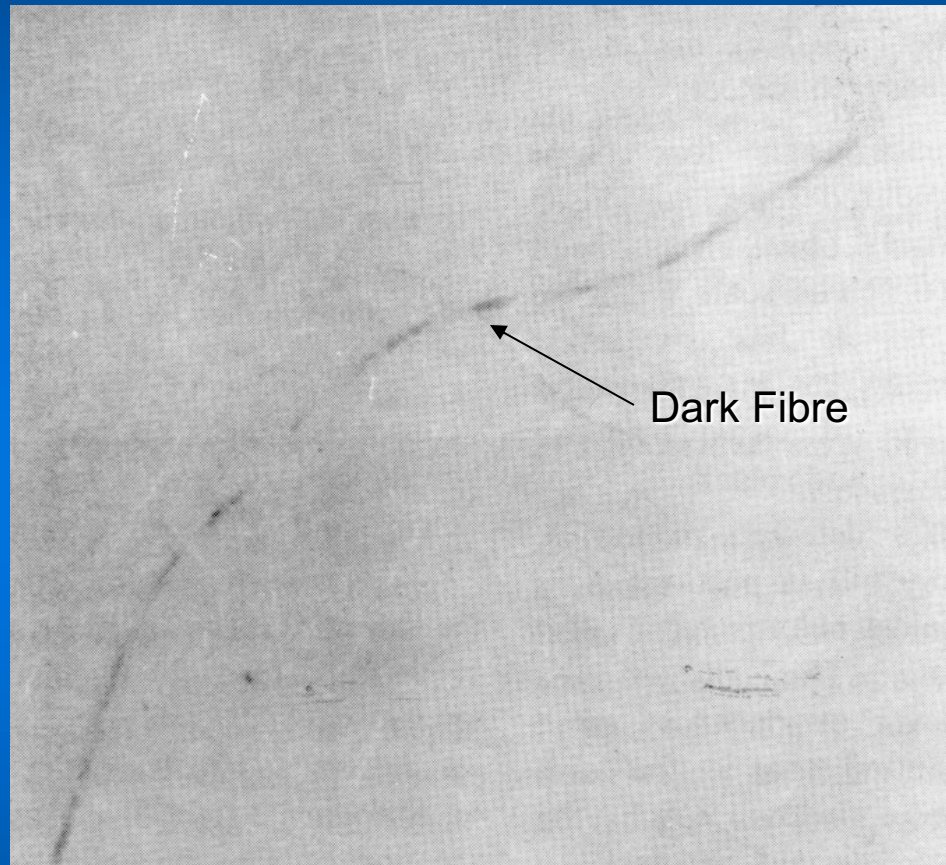
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Detection

- **Medullation**
 - tops measured
 - Projection Microscope
 - OFDA
- **Dark Fibre**
 - tops measured
 - Dark Fibre Detector (DFD)



Peter Auer

Source: Foulds, R. A. et al. (1984)



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Standards

- **IWTO-8-89**
 - Method for determining fibre diameter and percentage of medullated fibres in wool and other animal fibres by projection microscope
- **IWTO-57-96**
 - Determination of medullated fibre content of wool and mohair samples by opacity measurements using OFDA
- **IWTO(E)-13-88**
 - Counting of coloured fibres in Tops by the balanced illumination method



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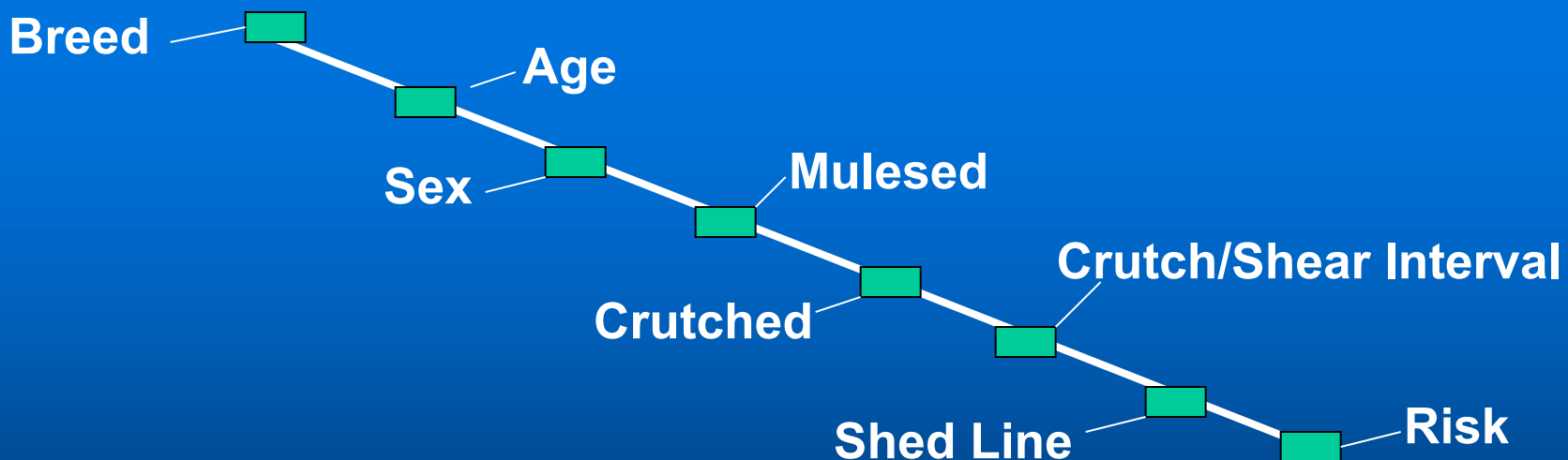
Control

- **Medullation**
 - breeding
 - avoidance
- **Dark Fibre**
 - breeding
 - pigmented not urine stained
 - gene identification
 - pigmented not urine stained
 - avoidance
 - pigmented and urine stained



Dark Fibre Risk Scheme

- Prediction
 - probable risk to buyers
 - CSIRO DWT development
- Factors influencing dark fibre risk prediction





Effects of Final Products

- **Medullation**

- when dyed appear lighter in colour
- coarser kemp fibres tend to lie on surface of the yarn and fabric

- **Dark fibres**

- smudge or dark line in white/pastel shades
- expensive to remove from fabric

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Further Reading

- Foulds, R.A. (1988) “Dark fibre contamination in wool - Its prediction and ramifications”, The Technical Feasibility of the Sale of Wool by Description, Seminar Proc. (1988) CSIRO, Division of Wool Technology, pp127-139.

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