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 ization by scanning electron microscopy of
 giant chromosomes of *D. melanogaster*.

With the technique of scanning electron micros-
 copy pictures of three-dimensional appearance of
 biological and other specimens can be obtained.
 In the following study the scanning electron
 microscope "Stereoscan" of the Cambridge Instru-
 ment Co. Ltd. was used. Recently the applica-
 tion of this technique has given some insight
 into the nature of achromatic lesions ("gaps")

induced by X-rays in chromosomes of *Vicia faba*¹.

The methods used in our scanning electron microscopical studies on giant chromosomes of

D. melanogaster seem to be open
 to improvement. Nevertheless
 two of the microphotographs so
 far obtained are demonstrated in
 this preliminary communication
 (Figs. 1 and 2).

The salivary glands (Berlin
 wild) were dissected in a solu-
 tion consisting of 0.09 M KCl,
 0.06 M NaCl and 0.005 M phos-
 phate buffer (pH 7.0)² and were
 then torn to several pieces with
 the aid of two forceps. After
 adding immediately a drop of 48%
 acetic acid and applying a cover
 slip, the preparation was pres-
 sed with the thumb. The next
 steps: removal of the cover
 slip by the dry ice technique,
 2 x 10 min alcohol absolute,
 drying in vacuum, mounting in
 orcein, selection of suitable
 chromosomes by light microscope,

removal of the cover slip by alcohol,
 hydration to water, keeping the slides
 for 3 h in distilled water. We then
 tried to remove residual cytoplasm
 covering the chromosomes by enzymatic
 digestion (trypsin) as described else-
 where³. Further steps: 5 min 0.1 N
 acetic acid, 1 h water-methanol (1:1),
 10 min distilled water, dehydration by
 alcohol, drying in vacuum. Areas of
 about 10 mm x 10 mm containing the
 selected chromosomes were cut out of
 the slide with a diamond and then over-
 laid with thin conducting layers of
 evaporated carbon, gold and again car-
 bon. When making the scanning electron
 microscopical photographs the chromo-
 somes were tilted to an angle of 66°
 from the normal plane to the direction
 of observation.

References: (1) Scheid, W. and H.
 Traut 1971 Mutation Res. 11:253-255;
 (2) D'Angelo, E.G. 1946 Biol. Bull. 90:
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 Blaschke and R. Christenhuss 1968
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