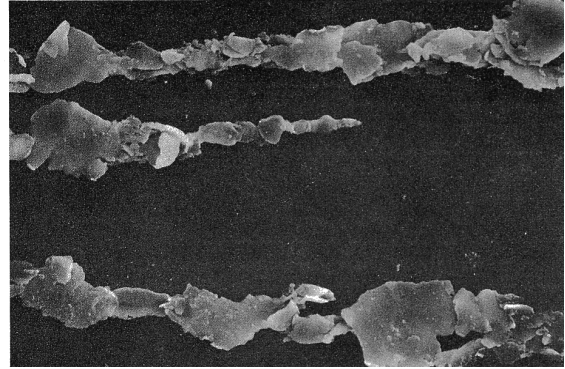


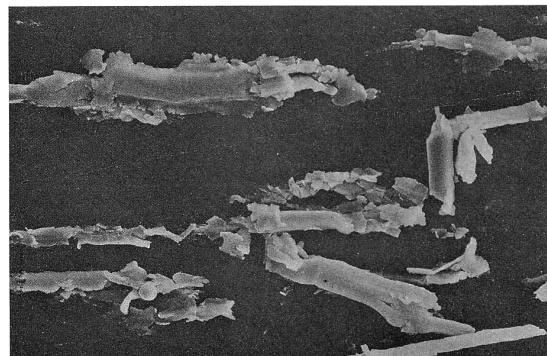
Physical characteristics of wear debris

Rubbing wear

The normal particles of benign wear of sliding surfaces. Rubbing wear particles are platelets from the shear mixed layer which exhibits super-ductility. Opposing surfaces are roughly of the same hardness. Generally the maximum size of normal rubbing wear is $15\mu\text{m}$.



Break-in wear particles are typical of components having a ground or machined surface finish. During the break-in period the ridges on the wear surface are flattened and elongated platelets become detached from the surface often $50\mu\text{m}$ long.



Cutting wear

Wear particles which have been generated as a result of one surface penetrating another. The effect is to generate particles much as a lathe tool creates machining swarf. Abrasive particles which have become embedded in a soft surface, penetrate the opposing surface generating cutting wear particles. Alternatively a hard sharp edge or a hard component may penetrate the softer surface. Particles may range in size from $2\text{--}5\mu\text{m}$ wide and 25 to $100\mu\text{m}$ long.

