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AN EXAMPLE OF THE USE OF POLISHING MARKS FOR MATCHING PAINT FLAKES.

DONALD F. NELSON

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The evidential value of paint in the investigation of crime is well known.

Where paint samples from two sources, e.g. from the scene of an accident and from a suspected motor vehicle, are in the form of large flakes it is sometimes possible, by means of matching broken edges together like a "jig-saw puzzle," to establish that the flakes from the two sources have common origin.

Kirk (1) states: "A circumstance which has been exploited successfully in establishing identity of paint flakes from two locations is the presence on them of characteristic striated marking. If the two pieces are contiguous, or from very close together on the original painted object, and if the paint has been scratched, the striations produced may match each other. Such markings are treated in the same manner as are tool marks." He illustrates this with two examples of paint surfaces showing abrasion marks.

Snyder (2) quotes a case where the undersurface of paint chips found at the scene of a "hit-and-run" motor accident, retained the impression of abrasive

marks in the metal of the fender of a motor car. It was possible to establish the origin of these paint flakes by comparing the ridged striations on their undersurface with the corresponding grooves and scratches produced by abrasives on the fender.

In an example published by Williams (3) matching fracture line and polish marks from the metal surface of a fender establish the common origin of two flakes.

The case here reported combines the features described by the above authors and is presented here because of the very fine detail retained by the undersurface of the paint.

In a "hit-and-run" investigation in Dunedin, New Zealand, flakes of grey paint were gathered at the scene of an accident, and other grey paint flakes were taken from a suspected motor car. The edge of a flake of paint from the scene was found to match the edge of a flake from the car for a length of one half inch. The matching of the two edges was confirmed by scratches in the grey surface paint which exposed blue and red paint and which corresponded across the adjoining edges. Figure 1

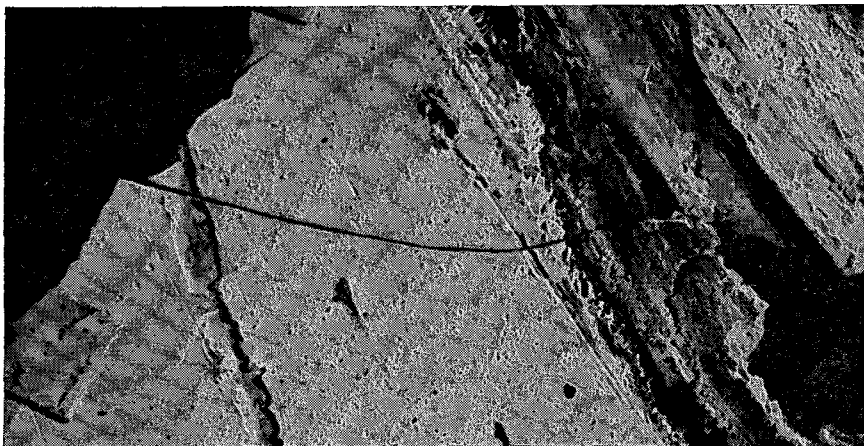


FIGURE 1
Surfaces of adjoining paint flakes. Magnification 6.5 times.

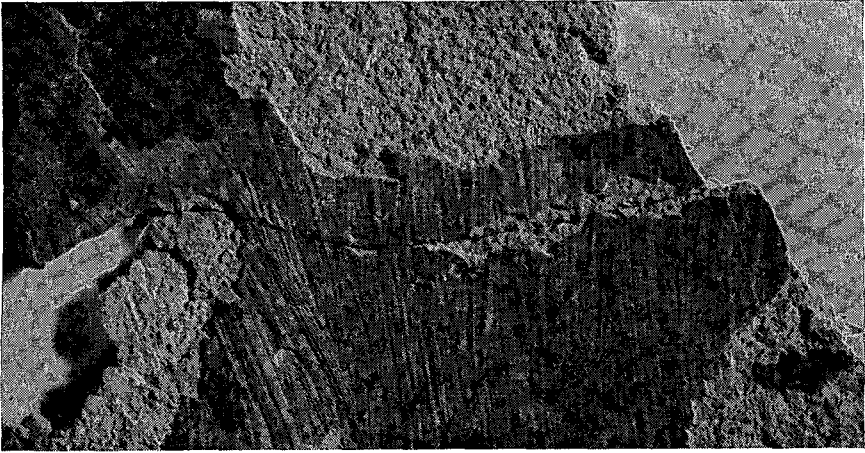


FIGURE 2
Undersurfaces of paint flakes. Magnification 6.5 times.

shows the scratches across the break and also the surface texture, which is emphasized by oblique lighting. The upper flake is from the car and the lower flake from the scene of the accident.

In addition, the undersurface of the paint was found to have retained an impression of the polishing marks on the metal. Figure 2 shows these impressed marks across the adjoining edges.

On microscopical examination of the matching edges it was found that, in a length of 0.5 millimetres, over sixty lines corresponded across the

broken edges. In Figure 3 may be seen some of this very fine detail retained by the paint.

This enabled the common origin of two flakes of paint to be established.

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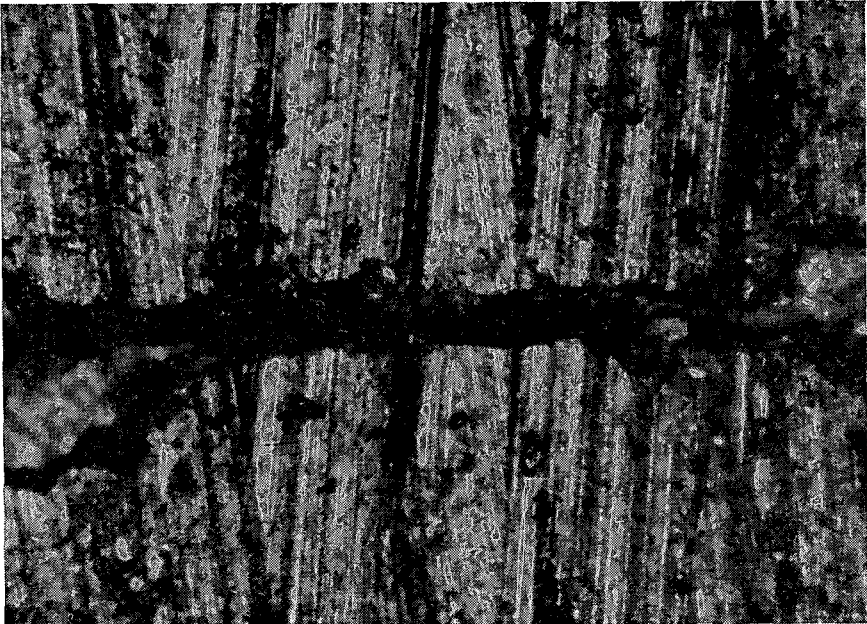


FIGURE 3
Fine detail on undersurfaces of paint flakes. Magnification 120 times.