Davie, M. J. and A. E. Kipps (Reading, U.K.)

INV GROUPING OF SALIVA AND SEMEN

The immunoglobulin light chain marker Inv(1) has been demonstrated in semen and saliva, using a technique which precipitates the mucin, which would otherwise cause non-specific agglutination of the red cells used in the test. The mucin is precipitated by freezing the fluid overnight, then thawing and centrifuging. Matched serum and saliva samples from about 100 individuals have been Inv(1) grouped and serum and saliva from any one individual have been shown to carry the same Inv(1) marker. Similarly, semen and serum from any one individual have the same Inv(1) group. Semen and saliva stains have been successfully grouped using large areas of stain, and extension of the work to samples suitable for forensic case work is described.

Extension of the work to the other immunoglobulin markers is discussed.

Davis, J. H. and R. R. Gomez (Miami, Fla., U.S.A.)

IMPROVED METHODS OF ACID PHOSPHATASE DETERMINATION IN THE INVESTIGATION OF RAPE

Vaginal acid phosphatase determination in the investigation of rape is well accepted. Simultaneous comparisons of qualitative and quantitative methods, based upon α-naphthyl phosphate and thymolphthalein monophosphate substrates in kit form, and published methods have been made. A qualitative α-naphthyl phosphate test to rule out low acid phosphatase values is recommended, based upon a modification of the serum Phosphatabs-Acid* kit. Quantification of positive samples with α-naphthyl phosphate substrate is also recommended utilizing the Phosphastrate Acid* kit to increase the degree of confidence in the results. * General Diagnostics, Morris Plains, New Jersey, U.S.A.

Davis, R. J. and J. D. DeHaan (Sacramento, Calif., U.S.A.)

TRACE EVIDENCE IN MEN'S FOOTWEAR

A comprehensive survey of five hundred pairs of used men's footwear has resulted in the collection of various types of trace evidence found imbedded in the soles and heels. The entire surface of the sole and heel areas of the various shoes were scanned for particulate material by trained personnel. A wide variety of footwear types — boots, slippers, sports shoes, moccasins and dress shoes was included. The frequency of occurrence of metal fragments, wood, paint, mineral debris, glass and other particulate matter has been calculated.

At least one fragment of colorless glass was found in approximately 39% of the shoes examined. Similarly, metal fragments were found in approximately 24% of the shoes, amber or green container glass in 12% of the shoes, and wood fragments in 3% of the shoes examined.

Retention of particulate materials was found to be enhanced in rubber soles and heels and much reduced in hard leather soles and heels.

In addition, the sizes and refractive indexes of the recovered glass fragments were recorded to permit the evaluation of this trace evidence as criteria for accidental (random) *versus* suspicious contamination.