

for it to become a forensically reliable technique, comparisons between foot remains and footwear need to be further studied.

In medicolegal contexts, a non-metric evaluation of pedal osseous features can augment identity reconstruction. Of note in the Ruxton case were the bipartite medial hallucal sesamoids present in foot number two. Bipartite hallucal sesamoids have multiple etiologies including, trauma, osteochondritis, and osteoarthritis (13–15). Since these bones commonly present with hallux valgus deformities, the findings were consistent with Mrs. Ruxton's antemortem bunion presentation, thereby increasing the likelihood that foot number two was Mrs. Ruxton's left foot.

Furthermore, the tissues removed from the first metatarsophalangeal joint of foot number two most likely consisted of subchondral bone cysts. Trauma and repetitive stress may form subchondral bone cysts at the head of the first metatarsal. These cysts often appear in conjunction with hallux valgus and osteoarthritis. Therefore, these histological findings would have been consistent with Mrs. Ruxton's antemortem bunion presentation.

In summary, the Ruxton case provides a historical example of matching foot remains to footwear as an adjunct method of identification. Given the potential forensic value of this technique, further empirical research in the following two areas seems warranted. First, since biomechanics and heredity play a critical role in foot morphology, the individuality, reproducibility, and reliability between foot remains and footwear needs to be quantitatively examined. Second, pedal osseous features must be further scrutinized for important forensic implications when compared with footwear evidence.

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**Corrections of:** Seward GH. Practical implications of charge transport model for electrostatic detection apparatus (ESDA). *J Forensic Sci* 1999 Jul;44(4):832–6

I am writing to you about a flaw in the protocol described in my recent article referenced above. One of the specified steps is not possible with the basic ESDA unit. Specifically, the corona wire cannot remain active after the vacuum is terminated. This error was identified by Miss Tracey Johnson of Marshall University while working as an intern for the West Virginia State Police. I wish to thank Tracey Johnson for her interest in my work and as well as her constructive criticism.

I do have specific recommendations regarding the limitations of my specified protocol, but first, I must apologize for my slow response to the important issues raised by T. Johnson. I no longer work at IISI Corporation. Consequently, delivery of her letter to me was delayed by many weeks. After further correspondence with T. Johnson, I now have the following message for the readers of *Journal of Forensic Sciences*.

In my recommendations for optimization of the ESDA protocol, I erroneously assumed that the control of the vacuum and corona bar were independent. My work on the ESDA phenomena was done on a machine other than ESDA. My protocol specified continuation of the corona charging after termination of the vacuum. Such a procedure is not possible on the ESDA unit as provided by Foster & Freeman Ltd.

The fundamental science of my protocol is still sound, but the practical limitations of the ESDA unit indicate some sort of compromise in the present with the possibility of full implementation in the future. In the present, I recommend the following procedures.

If the relative humidity (RH) is greater than 40%, then a charge-and-pump for the entire 2 min should be very effective. Based upon past experience, I don't think the loss of moisture will be significant with an ambient RH of 40% or greater.

If the RH is 20% or less, then some serious problems exist. The specimen will lose significant amounts of water during a 2 min charge at 20% RH. Such a loss of moisture can render the image beyond recovery within such a reasonable length of time as 60 min. Shorter durations for the charge-and-pump can also be ineffective due to a lack of sufficient deposition of charge. I encountered both of these problems during my research. The only reliable solution for me was to humidify the entire room. Another option is to let the charge decay slowly overnight.

Perhaps future versions of the ESDA system could offer independent controls for the pump and corona bar. It should even be possible to retrofit the existing unit with two switches where there is now only one.

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