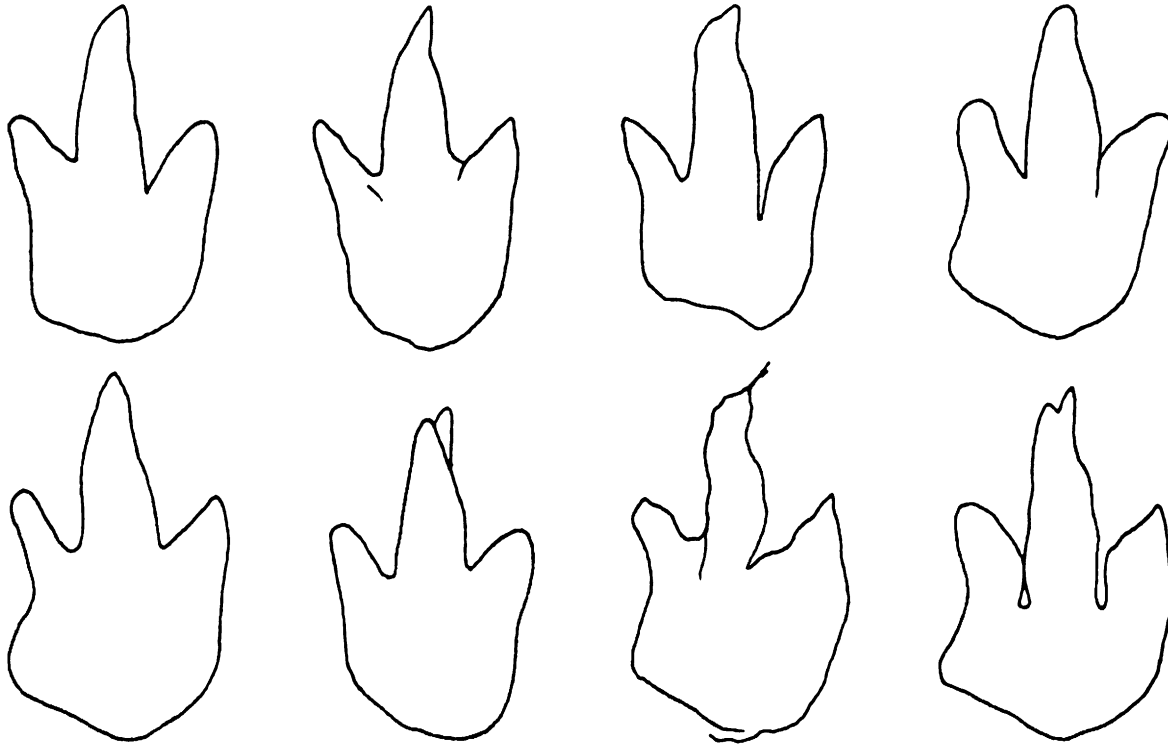


IT CAN BE DIFFICULT TO DETERMINE THE EXACT BOUNDARIES OF A FOOTPRINT



Eight different interpretations of a single footprint. Eight subjects were provided with the same photograph of a single footprint and were requested to trace the footprint's outline as carefully as possible. The photograph used in this experiment showed a theropod footprint, *Anchisauripus gwyneddensis*, about 12 cm long, from the Upper Triassic of Pennsylvania, USA (Bock, W., 1952; Triassic reptilian tracks and trends of locomotive evolution. *Journal of Paleontology*, 26: pl. 44).

It is notoriously difficult to produce satisfactory illustrations of dinosaur footprints. They are often depicted in outline sketches, silhouettes or line drawings that convey little more than the basic size and shape. In making such a drawing it can be difficult to determine the exact boundaries of a footprint: some prints do have sharp edges, but others have rounded margins that grade imperceptibly into the surrounding rock. W.A.S. Sarjeant¹ reported (1975: 285) that in museum collections he encountered some specimens 'in which India ink lines, supposedly bounding a print, actually traverse the impression of a digit; drawings based on such outlines would be very misleading'. An outline drawing of a footprint should always be viewed with some reservation: it represents one person's interpretation of a complex three-dimensional object, and someone else's interpretation might differ considerably. The need for caution is demonstrated in the above diagram, which shows eight different interpretations of a single footprint. Despite their subjective nature, outline drawings continue to be widely used because they are easy to make and economical to publish. Unfortunately, such line drawings tend to be copied from publication to publication until, ultimately, they may degenerate into diagrams that bear little resemblance to the original footprints. Nevertheless, outline drawings are valuable in the role of explanatory diagrams, as was stressed by Edward Hitchcock² in 1858:

In 1848 I expressed the opinion that 'for the discrimination of [footprint] species, outline sketches are better than full-shaded drawings of individual specimens, because they present more distinctly the essential characters'. . . I still remain of the same opinion.

¹ W.A.S. Sarjeant (1975) Fossil tracks and impressions of vertebrates. In *The Study of Trace Fossils* (ed. R.W. Frey). Springer-Verlag, Berlin and New York; p. 285.

² Hitchcock, E. (1858) (*Ichology of New England. A Report on the Sandstone of the Connecticut Valley, Especially its Fossil Footmarks*. W. White, Boston [reprinted 1974 by Arno Press, New York]; pp 51-2).