

example, that a dose of only eight aspirin a day temporarily reduced the amount of various prostaglandins in the seminal fluid of young male volunteers. All this research offers a fairly tight explanation for why aspirin can control inflammation in the early stages of arthritis—by inhibiting inflammation-triggering prostaglandins.

Now, Gerald Weissmann, Robert Zurier, Sylvia Hoffstein and Franco Quagliata of New York University School of Medicine have further evidence for prostaglandins' role in inflammation and arthritis. They have found that prostaglandins, which normally turn on inflammation, can also turn it off.

About a year ago, Quagliata and Zurier reported in *NATURE* that injecting massive doses of prostaglandins into rats with adjuvant arthritis, an artificially induced condition similar to rheumatoid arthritis, suppressed tissue inflammation and damage. They are now studying the same action in rats whose adrenal glands have been removed, to make sure the inflammation-suppressive action is indeed caused by prostaglandins, and not by adrenal steroid hormones. So far, Zurier told *SCIENCE NEWS*, they are quite sure prostaglandins, not the steroids, are the suppressors.

The New York University team also has evidence that, when prostaglandins switch off inflammation, they probably do so by turning off the release of certain potent enzymes from white blood cells. Weissmann, Hoffstein and Zurier report in this month's *AMERICAN JOURNAL OF PATHOLOGY* that they exposed purified human white blood cells to aggregates of suspected inflammation triggers—not the prostaglandins, but antibodies known as immunoglobulin G and rheumatoid factor (found in the tissue of 70 percent of all rheumatoid arthritis patients, although scientists are not sure what it is directed against). As the white blood cells engulfed the antibodies, a normal immune response, they released potent, so-called "lysosomal enzymes." Treating the white blood cells with fairly large concentrations of several kinds of prostaglandins, the researchers found, turned off the release of the inflammation-causing enzymes.

Further questions about prostaglandins' role in inflammation and rheumatoid arthritis still need to be answered. For example, how can prostaglandins that normally turn on inflammation also turn it off? This seeming contradiction, Weissmann says, is probably explained by a rather common biochemical phenomenon known as "negative feedback." That is, whenever certain levels of a chemical are reached in the body, those levels signal the body to turn off production of the chemical until further notice. □

Footprints in the sand(stone)



Courtesy of Norman A. Wakefield

Genoa River trackways: "Remarkably clear" imprints 355 million years old.

About a year ago, two Australian scientists discovered three ancient trackways, or sets of footprints, preserved in sandstone in the Genoa River beds of eastern Victoria. Norman A. Wakefield of Monash Teachers' College and James W. Warren of Monash University kept the discovery to themselves until the trackways could be safely transferred to a museum. Now, Wakefield and Warren have published their analysis of the find in *NATURE*. The published article, and a communication from Wakefield, clarify and add details to an earlier report (*SN*: 8/19/72, p. 117), which contained several inaccuracies.

They conclude that the trackways are the oldest known tracks of limbed vertebrates. The tracks, the scientists estimate, are about 355 million years old, about the same age as the oldest known fossils of limbed vertebrates, previously found in Greenland.

One trackway, about 1.1 meters long, is a "remarkably clear" set of 38 impressions. The tracks made by the hind foot are about 3.5 centimeters wide with five toes. One track shows traces of webbing between the toes. The forepaw is smaller and has at least three toes. The researchers estimate that the animal that made the tracks was about 55 centimeters long.

The second trackway is not as clear as the first, but it shows a wavy mark between the left and right foot impressions that was probably made either by a tail or by the animal's underbelly. This animal had a longer stride than the other and the impression of the forefoot is missing in some places. This indicates, say the researchers, that the animal may have been using body and tail undulations to assist in locomotion. The third set of tracks reveals no details of foot structure, but relative placement of the footprints indicates that the animal was 90 centimeters long.

The best-known of the Greenland fossils are of *Ichthyostega*, an amphibian slightly less than a meter long, with a blunt head, stout tail and short limbs. Wakefield says the Genoa River trackways were probably made by amphibians similar in size and general body and foot shape to *Ichthyostega*.

One of the most interesting aspects of the find, say Wakefield and Warren, is the way the toes of the hind foot in the first trackway point outward from the body. In later amphibians, the hind feet are pointed more toward the front. Wakefield predicts that study of these tracks "will throw new light on the early evolution of tetrapod locomotion, for the prints demonstrate a more primitive stage of limb development than has been observed previously in the fossil record." □

The APA gets into population psychology

Psychologists are not trend setters. They, like most scientists, go where the Government money is and attempt to solve problems currently in the public eye. In this manner psychology is becoming more socially active and problem-oriented. One problem that has received a considerable amount of attention in the past five years is population control.

Demographers, sociologists, economists, political scientists, legal scholars and anthropologists have all become interested in the various aspects of population research that fall under their auspices. Similarly, three years ago, the American Psychological Association officially began to look into the psychological ramifications of population control. An APA task force was established to study the possibilities of teaching and training population psychologists and broadening the knowledge of population