historical interest; a dated entry in a researcher's daybook, or in a letter to a friend, or in a quarterly report to one's director might have even more interest.

In taxonomy, priority of actual *publication* is significant, since it is a criterion for the adoption of names and other nomenclatural actions. The criteria of publication, as defined by the International Code of Zoological Nomenclature, are that a work "be issued for the purpose of scientific, public, permanent record" and that "it be obtainable by purchase or free distribution." These are objective criteria, for, while the exact date of publication may be difficult to determine, it is a point of fact, actually or potentially ascertainable, and concerning which evidence can be gathered. These might well serve as criteria for priority in other fields as well. The emphasis is on public issuance of the information and the time it becomes available to the scientific community for permanent record, without favor, classified distribution, or other limitation.

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. . . I would like to comment on Page's mild criticism of Osler's stand on priority. First, a technicality; Osler did not, as Page suggests, opine "that the credit goes to the man who convinces the world, not to the one to whom the idea first occurred. . . ." Osler quoted these words in his address on "The first printed documents relating to modern surgical anesthesia" [*Proc. Roy. Soc. Med.* **11**, 65 (1917-18)], crediting them to their author, Francis Darwin. Osler then applied the thought to Morton, observing that "Morton convinced the world; the credit is his." It is probably unfair to extend Osler's remarks outside the particular context of the arguments over priority in surgical anesthesia. And within this context, it seems to me, Osler's position is unassailable. For, as he pointed out, surgical anesthesia did not exist prior to 16 October 1846, despite the fact that Horace Wells and Crawford Long had both successfully anesthetized a small number of patients.

Wells attempted a public trial of nitrous oxide anesthesia at the Massachusetts General Hospital, which was a tragic failure. Long, unexplainably, was not sufficiently impressed with the merits of anesthesia either to use it extensively in his own practice or to attempt to extend its use either by demonstrating it to his colleagues or by publication. Surely there are two requirements involved in priority: first, that one make a discovery, and second, that one communicate it to the scientific community. Page's understanding of this is implicit in his editorial, for three of his four concluding suggestions relate to the form of publication.

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More about Car Safety

. . . A simple solution to the automobile-safety problem [see Letters, 21 Jan., p. 277] would be to give complete publicity to all accidents, fatal and nonfatal. Practically every accident of consequence is a matter of record, and the record includes the make and year of manufacture of the cars involved. A safety factor could readily be established by dividing the total number of accidents in each make of car by the number of fatalities resulting. To be fair to manufacturers (even though they may not be being fair to the public), weight should be given to the number of cars of a given make on the road and to their age. Certainly publication of the fact that fatalities were particularly high in certain cars would compel their manufacturers to take notice. The ratio of total number of accidents to total number of cars of a given make in service could also be published. This would give a good indication of which cars were accident-prone because of faulty design.

It is an odd fact that, while insurance companies have all these figures, they will not release them. I have tried to obtain such statistics from insurance men, many of them personal friends, but a wall of silence is erected the moment the subject is mentioned.

It is high time some organization came forward to do battle with the agencies that seem bent on keeping facts about automobile safety from the public. Why not the American Medical Association? . . .

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In commenting (Letters, 21 Jan., p. 279) on drivers' ineptitude as being the major cause of automobile crashes, Dickinson misses the principal point concerning the need for safe automobiles. It is because of this very ineptitude—or the occasional psychic lapse which occurs in most people at one time or another—that automobiles need to be made safer. Countless examples could be given of safety measures that have been put into use in all areas of human behavior in order to protect not only the inept from their own acts but also the innocent from the actions of the inept.

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. . . Any rear-engined car, from the small Renaults and Simcas to the Corvair, can be driven safely by people of average ability who take the trouble to become aware of the peculiarities of handling associated with rear-engined vehicles and make adequate compensation in their driving habits for these characteristics.

Domestic cars in general seem far behind such vehicles as the Citroen DS/ID series of cars in overall design with respect to safety. For example, the Citroens have extra-capacity, premium-grade tires; a balanced braking system including a device which apportions the load between the front and rear brakes to prevent lockup; a body designed to preserve the driver's vision if either the hood or trunk lid should open; a nonlethal steering column; and other safety features.

In all fairness it should be noted that the handling and cornering qualities of our domestic vehicles have greatly improved recently; cars like the Chrysler-built compacts, with small torsion-bar suspension, offer quality available only in exotic imports around 10 years ago.

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. . . A Senate subcommittee headed by Senator Ribicoff revealed that the American Motors Corporation cars and General Motors Cadillac were the only cars made in 1965 with true dual brakes. During the Denver meeting of the AAAS, I had the opportunity to question the director of research of General Motors about this. His reply was that the public would not be will-

ing to pay the additional cost of dual brakes. In my opinion the difference in cost would be so small that buyers wouldn't feel it. (The American Motors design consists of a simple mechanical separation in the master cylinder between the flow of rear-wheel brake fluid and the front-wheel brakes.) The industry has been busy selling a "new" brake innovation, disc brakes. The disc-brake patent is more than 40 years old and is in the public domain. . . .

The automobile industry used to be looked upon as the leader in quality control and reliability. In recent years these have been sacrificed because of higher labor costs . . . and the practice of including an obsolescence factor in design. . . .

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Project Orion

In "Death of a project" [F. J. Dyson, *Science* **149**, 141 (1965)], Project Orion is described as "a project to design a vehicle which would be propelled through space by repeated nuclear explosions occurring at a distance behind it." The author says that "Designs were worked out in detail for vehicles that could carry eight men and a payload of 100 tons on fast trips to Mars and back" after the vehicle had been "lifted into space by Saturn chemical rockets."

Space travel consists essentially not of being "propelled through space" but of acceleration, followed later by equivalent deceleration. The original acceleration given to the proposed vehicle by the Saturn rockets could, as is now standard practice, be later counteracted by the decelerative effect of returning through the earth's atmosphere. But where is there any discussion of the fact that all of the acceleration added by the *exotic* means of "propulsion" would have to be subtracted later by *conventional* means, since it is quite obvious that the new, exotic means could not be used for deceleration?

Perhaps that is why the project was dropped.

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