

# Gas Excitation for photo chemistry, free-radical production, and spectroscopy with Raytheon's completely packaged microwave power generator systems



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## Letters

### Science in Spain

We find to the point much of the information provided by A. G. Verduch [*Science* **130**, 126 (1959)] in his comments on the article by David Gates on basic research in Europe [*Science* **128**, 227 (1958)]. But, although Verduch's comment on Spain is brief, it conveys the idea that research in Spain is "free"; that there is a free exchange of theory, methods, and ideas, when it is common knowledge that there exists a censorship which makes it difficult to receive information in such fields as political economy, evolution, and sociology.

Although much good work is actually done in Spain by our colleagues in the field of anthropology, this cannot, probably, erase the effects and norms of the regime. A few examples will suffice.

From *Manual de Antropología* (1946), by Pérez de Barradas, professor in anthropology: "There are anthropologists who still cannot do away with the evolutionist load" (page 12); and, "We think anthropology as a science should abandon the theme of the origin of man, and gallantly confess that it is not known when, where, or how man appeared on the earth, and also the utter failure of evolutionism" (page 25).

In volume 1 (1954) of the ten-volume *Historia Universal*, edited by S. A. Espasa-Calpe (one of the most renowned editors of Spain, if not the most renowned), in the chapter "The birth of humanity," there is a strong criticism of Weidenreich in which it is stated (page 101): "Today no one believes that man comes from an animal world of ancestors," and so on.

B. Melendez, professor of paleontology at the University of Madrid, and director of the department of paleontology of the National Museum of Natural Sciences, in the prologue to the book *Hacia el Origen del Hombre* (1956), by Valeriano Anderez Alonso, writes the same sort of equivocal concepts: "Organic evolution *within certain limits* [our italics] is a historical reality," and so on.

Since this is "Darwin's year," it seemed pertinent to us to provide the foregoing information and to give examples of the regrettable conditions that unhappily prevail in much of Spain's scientific life.

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### The Green Ray

Gerhart S. Schwarz says that the green ray can be seen only from an elevation but does not say how great an elevation [*Science* **130**, 276 (1959)].

I formerly had a shore cottage on the northwest shore of Oahu, and I have seen the green ray several dozens of times when my eyes were about 16 feet above sea level.

I have also seen the green ray from shipboard between Honolulu and California, in the North Atlantic Ocean, and in the Adriatic Sea.

Most remarkable, however, was seeing the green ray once from the observation platform at the rear of an eastbound train somewhere on the Great Plains.

HAROLD S. PALMER

*Honolulu, Hawaii*

In his letter concerning the green flash, Gerhart S. Schwarz says, "the green ray can be seen only when one views the horizon from an elevation, and this . . . plus factors of latitude, season, and weather . . . probably explains why few sea captains are familiar with it." This comment is misleading, for I have seen the green flash many times while sitting or standing on a beach or the deck of a ship. I have seen it also from planes and from mountain tops, and in latitudes from the Tropic of Capricorn to the Arctic Circle.

From an elevation, the green flash may at times be seen *before* the sun sets. On such occasion, two notches may be seen on the sides of the sun, and these two notches coming together at the top of the sun result in a green flash.

One may reasonably look for the green flash at sunset whenever one has a clear horizon to the west, and sea captains should have many opportunities to observe it.

CHARLES H. SMILEY

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### Stratospheric Fallout

Fry and Kuroda have recently studied stratospheric fallout, using the ratio  $Ba^{140}/Sr^{89}$  as a parameter. Their report [*Science* **129**, 1742 (1959)] appears open to serious objection. The basis of the authors' thesis is their assumption: "Since the fission products remain in the troposphere for only a month or two, the fallout since December or January must have originated almost exclusively from the stratosphere." This assumption is not estab-