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**COVER:** The exquisite Chinese calligraphy says "Science News." Millions of people can read it, but most computers can't. This causes serious problems for countries like China, Japan and Korea whose written languages are based on Chinese ideographs—but help is on the way. See story p. 26. (Calligraphy by Geronimo Chang)

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# LETTERS

## One of the beautiful people

I have read the articles related to the Dirac symposium (SN: 6/20/81, pp. 392-399) with great interest and enjoyment. As a regular subscriber to SCIENCE NEWS for the last five years, I have often been satisfied with the timely, clear, and reasonably accurate coverage of diverse scientific development.

At the moment, however, I am writing to point out that James Clerk Maxwell (1831-1879) is clearly one of the "Beautiful Math" People—he is an outstanding theoretical physicist—and by no means a famous or a good example of an experimentalist as is said in the above issue (p. 392). Even though Maxwell is famous for developing electromagnetic theory, he has also made important contributions to thermodynamics and kinetic theory. He also did pioneering work on the theory of color and the nature of Saturn's rings. It should perhaps also be mentioned that he started his career by studying geometry and presenting a paper on plane curves to the Royal Society of Edinburgh before the age of fifteen.

In addition, I would like to say that the credit for originating the concept of an electromagnetic force field (lines of force) should be given to Michael Faraday (1791-1867) rather than to Maxwell as is done in this same issue (p. 399). One of Maxwell's papers on the topic is, in fact, entitled: "Faraday's Lines of Force."

Mesgun Sebhata  
Rock Hill, S. C.

## The dream debate

"The Dream Debate" (SN: 6/13/81, p. 378) accurately portrayed the predicament of the present theories of perception. No electrochemical or quantum mechanical descriptions of processes within the brain can make any direct reference to our perceptions. This is a logical limit of the physical sciences: *Theories of mind and matter have no certain intersection.* Not all stimuli are perceived (selectivity), and not all perceptions are linked to stimuli outside the brain (hallucination). Is information "lost" in the brain? Can it be created there? It is not even clear that processes within the brain must be linked with perception, or vice versa.

Obviously, these questions do not pertain exclusively to the dream state: In a dream my environment is identical to that of the waking world, in that I am a conscious element in a "material" universe. Recent interpretations of the work of Heisenberg and Schrödinger suggest that high energy physics reveals the fundamental "construction" of the mind as well as matter. If psychologists ask of the mind what physicists are asking of matter, I am sure we will come to the same answers.

Robert James Bloomfield  
Ann Arbor, Mich.

## Citations and questions

There are a number of contemporary reports to support Mr. Generales's contention (SN: 6/13/81, p. 371) that experimentation aimed at disabling electrical devices through the use of some sort of electromagnetic pulse was being carried out before WWII.

The New York Times on 24 May 1924, p. 25, reported that "an electromagnetic invention by a Russian engineer" has been developed "for destroying airplanes."

The following day The Times told of a device invented by an English scientist that "would be capable of ... stopping airplanes in flight and bringing motor cars to a standstill." On the same page is a story from Germany that the Reichstag was told that three inventions had been perfected in that country for "bring[ing] down airplanes, halt[ing] tanks on the battlefields, ruin[ing] automobile motors."

And the Colorado Springs Gazette of 30 May 1924, p. 1, quotes an English engineer representing a German scientist who was offering a device for "stopping airplanes...in midflight" that such a machine brought down French airplanes over Bavaria in 1923.

Clarence Lasby's *Project Paperclip* (Atheneum, 1971) on the Allies' intelligence sweep of Nazi research centers immediately after Germany's surrender also mentions, pgs. 13 & 52, "engine-stopping rays."

Though there are many other citations of such devices there are an equal number of unanswered questions about them.

Oliver Nicholson  
Provo, Utah

## Auroral information

I am very pleased to find such an extended review ["Seeking the auroras of the Valkyries"] of our paper presented at AGU-Baltimore (SN: 6/13/81, p. 375). The comments you are making are very appropriate. There is, however, one point which may cause some misunderstanding and that is your explanation on how the author of the "King's Mirror" knew about the aurora. We do not intend to say that the non-dipolar terms could have caused the aurora to be observed by the author in middle Norway, but on the contrary we tend to allude that the author never saw the aurora himself but only heard of it by sailors who had been to Greenland. The non-dipolar terms are drawn in an attempt to explain why the Norwegian settlers on Greenland could have seen the aurora in spite of the oval, [which] according to our model would pass far to the north of these settlements.

Asgeir Brekke  
Tromsø, Norway

*Correction: In the top figure on p. 20 (SN: 7/1/81) the observed characteristics should be labeled B and D. The bottom shows modified, rather than extreme, examples of current models of evolution.*

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