

Before calculating the length of the googol, I estimated it to be several hundred feet long. After calculating the length of it, you could push me over with a feather. The first time I saw it was in an issue of SCIENTIFIC AMERICAN magazine about ten years ago. But otherwise, I have never seen it in actual use either, only in math textbooks. We do run into some sizable numbers on the job, which are written in powers of ten, but nothing like the googol. That is, indeed, quite a number.

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(The words certainly can be confusing. "Ten to the tenth to the tenth" can be taken to mean the quantity (ten to the tenth) raised to the tenth power, or $(10^{10})^{10}$, which equals 10^{100} , or one googol. By stretching slightly, however, one could say, as our correspondents point out, that it means ten raised to the (ten to the tenth) power, although strictly speaking that would refer to the phrase "ten to the (ten to the tenth)." In that interpretation, it would be $10^{(10^{10})}$, or $10^{10,000,000,000}$, a much larger number. It is still not as big as a googolplex, however, which, as writer Rubenzahl says, is ten raised to the googolth power, or $10^{(10^{100})}$. Ed.)

Circumcision: a reply

This is a reply to the many comments and questions raised by Dr. Berkes (SN: 7/5, p. 4) referring to my earlier brief letter refuting a bigoted criticism of circumcision as a cancer preventive.

The viral venereal concept of genital cancerogenesis first promulgated by me in September 1942 JOURNAL OF UROLOGY, was primarily based on a survey of a large number of prostatectomies performed by me in Brooklyn between World Wars I and II. The ratio of malignant to benign tumors of the prostate was 1.7 percent for the Jews vs. 20 percent for the white non-Jews. The latter corresponded closely to the national average. The great majority of the Jewish patients were immigrants from the more or less segregated ghettos and pales of Eastern Europe, with little opportunity to indulge in inter-ethnic sex relations.

The incidence of cancer of those organs that are vulnerable to venereal infections, comprising 25 to 30 percent of all cancers in this country, is much lower in Jews than in non-Jews. Penile cancer, though 2 to 6 percent of all male cancers in the U.S., and up to 30 percent in the Orient, is virtually unknown in Jews. Cervical cancer, reportedly nonexistent in a large number of Canadian nuns and very rare in

nonpromiscuous Jewish women, comprises 20 to 30 percent of all female cancers in this country and 40 to 60 percent in the Orient.

In support of the fact that sexual promiscuity and venereal diseases are important contributory factors in genital cancers, even Jews are vulnerable if they practice sexual promiscuity with virus carriers. Thus 73 percent of my Jewish cancer patients admitted G.C.

It was most erudite for a nonmedical scientist like Dr. Berkes to suggest including bladder cancer in the same category. Actually, a lower incidence of such cancers in Jews was first presented by me before the Section on Preventive Medicine at the American Medical Association 1964 meeting.

With the alarming increase in the number of homosexuals, and ano-rectal gonorrhea affecting 50 percent of them according to Kinsey; the rectum might also be considered a secondary sex organ. This may account for a lower incidence of rectal cancer among Jews as recently discovered.

At long last, genital cancers are now quite generally accepted as a viral venereal infection (like G.C., trichomonas, syphilis, etc.), transmitted from person to person through coitus. Since these cancers are much less common in Jews who are completely circumcised at birth, the logical conclusion is that the carcinogenic viruses apparently incubate in the bacteria-rich smegma secreted under the hard-to-sterilize foreskin of the uncircumcised male.

Recent findings of viruses in cancers of the prostate and cervix, and herpesvirus type 2 in penile smegma, seem to confirm my original concept first presented in 1942.

Replying to the letter from J. J. Griggs (SN: 7/12, p. 20), there is presently no vaccine available for immunization against genital viruses and cancers. The common venereal infections can generally be promptly cured by antibiotics; the viruses, however, invulnerable to these drugs, apparently lodge and propagate stealthily in the various crypts of the organs involved, and many years later develop into cancer. Thus the availability of an effective vaccine seems far in the future.

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Pollution control

We have an urgent need for more pollution control with necessary funds. But we also have a more urgent need to face reality. Our pollution problem is growing by leaps and bounds. Despite this we are wasting anywhere from 65

cents to over 95 cents out of each tax dollar allocated.

At the same time we have had available low-cost technology which would end pollution at a small fraction of the costs we are now paying. We can build new and far more efficient treatment plants for less than 35 percent of the usual costs.

Secondary treatment can be added to existing treatment plants, or doubling the capacity, for less than 5 percent of the plant costs. Efficient use of this technology would remove the storm-water overflow problem without the need for separate sewers.

There's no alibi for pollution. There's no alibi for misuse of public funds.

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Photogenic but wrong

The cover (SN: 8/9) has on it a very interesting photographic comparison of the *Diplococcus pneumoniae* and an Asiatic Elephant (*Elephas maximus*).

I would like to point out the discrepancy of a fine example of an Asiatic elephant and the incorrect name associated with it, *Loxodonta africana*, which is the generic name of the African elephant.

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Other discussable matters aside, I must at least remind you that the pachyderm pictured on the cover of the Aug. 9 issue is not *Loxodonta*. It is of course *Elephas*, the variety of proboscidae of Siam, Burma, and the Indian subcontinent. *Elephas* generally substitutes for *Loxodonta* in Tarzan movies and the like, it being much the more tractable animal, but needless to say, SCIENCE NEWS has no grounds for making the same error. And by no stretch of genetic differentiation can the sudden appearance of *Elephas* in Africa be justified.

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Elephas maximus



Loxodonta africana