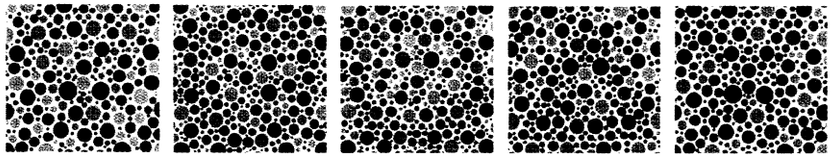
LETTERS

What is perceived

A Merck official gives his company's view of "patenting in the genomes field." The representation of scientists and engineers on the central committee of the Chinese Communist Party is discussed. Whether a 1996 *Science* report explained "important features of the HIV-1 epidemic" is debated. And could software be developed for computer screens that would give color-blind individuals "a fuller range and vividness of color vision"? (Below, plates used to assess color vision defect, which read as ▽, ○, ○, △, and × by those with normal color vision.)



Genome Patenting

Please allow me to comment on statements made in the News & Comment article "Sniping away at genome patenting" by Eliot Marshall (19 Sept., p. 1752). The boldfaced partial quote attributed to me inaccurately links two statements, one incorrect and the other out of context, that refer to my remarks as moderator of the National Human Genome Research Initiative Advisory Council session on 11 September 1997. The attribution reads: "Merck opposes patenting genetic data because it 'noticed that royalty claims were stacking up' on its products."

Regarding the first point, Merck & Co., Inc., does not oppose patenting in the genomes field. Merck, along with other research-intensive companies in the pharmaceutical and biotechnology industries, believes that the availability of intellectual property protection for genomic inventions will promote the advancement of biomedical research and the development of new gene-based or gene-derived therapeutics and diagnostics. However, Merck believes that patentability of genomic inventions and broad access to these inventions as basic research tools are mutually compatible. Together, patents and appropriate access maintain incentives for commercial investment in genomics research, while promoting an open public exchange of scientific information, thereby speeding identification of disease-related genes and development of gene-based or gene-derived therapies.

My comment on the stacking of royalties was made in the context of the whole industry, not Merck specifically. While patent stacking is a concern, it did not form the basis of the Merck view of patents in genomics. Merck believes that the requirements of patentability for biotechnology inventions should be the same as those for nonbiotechnology inventions. Under U.S. patent law, the invention must fall within the definition of patentable subject matter; must be novel and nonobvious; and must have utility. Consistent with patent law, Merck does not believe that patents should be awarded to either genes or expressed sequence tags for which the function or utility is purely speculative.

Merck has taken a consistent position that it is possible, and desirable, to distinguish between access and appropriate patenting in the genomics field. Public access to sequence data, including single nuclear polymorphisms (SNPs) will maximize the probability that new genes will be discovered and that there will be improvements in health care.

Alan R. Williamson
Merck Research Laboratories,
Merck & Co., Inc.,
Rahway, NJ 07065–0900, USA

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Chinese Academy Members

The News article "China elevates scientists to party posts" (ScienceScope, 26 Sept., p. 1915), mentioned that only two of the five members and alternates of the 15th Chinese Communist Party Central Committee (CCPCC) who are members of the Chinese Academy of Sciences (CAS) served on the previous central committee. That is incorrect. Lu Yongxiang, the current CAS president, was also a 14th CCPCC member along with Song Jian and Zhou Guangzhao. In terms of CCPCC members and alternates

with CAS membership, the numbers were 9, 8, and 7 among the past three CCPCCs, which means that the share of CAS members, elite in the Chinese scientific community, in CCPCC has decreased.

Cong Cao
Columbia University,
New York, NY 10027, USA

Science regrets the omission of Lu Yongxiang from the list of previous members of the central committee. However, the slight reduction in the number of academicians on the central committee is more than offset by a rising number of scientists on the committee who are not CAS members but who hold leading positions in China's scientific community. There also are more senior engineers than before in the party's political bureau.—**Eds.**

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Different Subtypes of HIV-1 and Cutaneous Dendritic Cells

Max Essex and his group (L. E. Soto-Ramirez *et al.*, Reports, 1 Mar. 1996, p. 1291) describe observations that suggested that human immunodeficiency virus–type 1 (HIV-1) strains from genetic subtype E were more replication-competent than subtype B strains in Langerhans' cells (LCs), which are dendritic cells (DCs) isolated from epidermal tissues. Studies in humans and in the simian immunodeficiency virus (SIV)–infected macaque model suggest that these cells may be involved in the transmission of HIV-1 across the vaginal epithelium (*1*). Thus, Soto-Ramirez *et al.* propose that their observations could account for the rapid spread of subtype E strains by heterosexual intercourse in Thailand (*2*). This proposal received much attention in the news media and public health organizations and gave rise to speculation about a new wave of heterosexual, subtype E HIV-1 infections in America and Europe as a result of sex tourism in southeast Asia. The concept of subtype-dependent variations in transmissibility of HIV-1 would also have important implications for the design of HIV-1 vaccines. Consequently, in two independent studies (*3*, *4*), we investigated these conclusions, but were unable to confirm them.

Studies by Dittmar *et al.* described the infection of mature, granulocyte-macrophage colony-stimulating factor-cultured LC suspensions with 26 HIV-1 isolates of subtype A, B, C, D, E, and F (*3*). In general, activated peripheral blood mononuclear cells (PBMCs) replicated virus more efficiently than the LCs, irrespective of the viral subtype and phenotype. Furthermore, the heterosexually transmitted isolates tested did not exhibit a specific tropism for LCs when compared to homosexually transmitted isolates, again irrespective of the genetic subtype. The presence of both CXCR4 and CCR5 mRNA in the LCs, and the fact that the usage of CXCR4 and CCR5 was independent of virus subtype for all the primary isolates used in this study (*3*), suggest that the selective transmission of non–syncytium-inducing (NSI) viruses cannot be attributed solely to the selective expression of certain co-receptors on LCs. In a separate study, cutaneous DCs (comprising LCs and dermal DCs) were isolated from skin organ cultures and purified by cell sorting. With the use of these DCs, Pope *et al.* observed that, although there was considerable strain-dependent variation in replication efficiency (the viruses usually replicated better in activated PBMCs), there was no evidence for the preferential replication of subtype E HIV-1 isolates in the DC cultures, as compared with the subtype B isolates (20 E and 30 B subtype viruses were tested) (*4*). HIV-1 replication in DC-T cell cocultures was also independent of whether the viruses were characterized as T cell–tropic/SI or macrophage-tropic/ NSI.