Ura^- was also associated with asymptomatic gonorrhea in men who did not have DGI, and were not sex partners of patients with DGI. The asymptomatic cases consisted of 20 white and 5 black asymptomatic heterosexual men who were examined because they had other venereal diseases, or because they were named as contacts of women with gonorrhea. All 25 denied recent or current symptoms of urethritis, and no urethral exudate was detected by urethral stripping. None had had sexual exposure during the 7 days prior to treatment, and thus all were beyond the usual incubation period of gonorrhea. *Neisseria gonorrhoeae* was isolated from the urethra of each case. Each asymptomatic case was matched by age and race with another heterosexual male control with symptomatic gonococcal urethritis treated at the same clinical facility within 30 days of the case with which they were matched.

Specimens were obtained for culture from both the asymptomatic cases and the symptomatic controls by inserting a urethrogenital swab into the urethra. The swabs were inoculated onto a selective medium, consisting of 1 percent V-C-N Inhibitor (Baltimore Biological Laboratory, BBL), 1 percent IsoVitaleX (BBL), 5 percent "chocolatized" sheep blood, in gonococcal (GC) base agar (BBL), and incubated at 36°C in candle jars. All isolates were identified by Gram stain, oxidase reaction, colonial morphology, and sugar degradation reaction. All isolates were tested for nutritional requirements for arginine, hypoxanthine, uracil, methionine, and proline, as described (*8*), except that agarose was used instead of methanol-extracted agar to give better growth of the $Arg^-Hyx^-Ura^-$ strains.

$Arg^-Hyx^-Ura^-$ strains were recovered from 96 percent (24/25) of the asymptomatic men and from 40 percent (10/25) of the symptomatic controls ($P < .0001$, Fisher's exact test). The reason why $Arg^-Hyx^-Ura^-$ strains are more likely than other strains to cause asymptomatic infection is not known. These nutritional requirements per se might limit the intracellular or extracellular growth of these strains. Alternatively, it is possible that these phenotypic markers are coincidentally linked to another determinant responsible for the failure to cause inflammation.

The results were analyzed by race; $Arg^-Hyx^-Ura^-$ strains were isolated from 95 percent (19/20) of the asymptomatic white men, 100 percent (5/5) of the asymptomatic black men, 45 percent (9/20) of the symptomatic white men, but from only 20 percent (1/5) of the symptomatic black men. The difference between symptomatic black and white men is not significant in this small sample, but in a study of 214 gonococcal isolates collected by Thornesberry and Wiesner from men in nine U.S. cities participating in the CDC (Communicable Disease Center) Cooperative Gonorrhea Therapy Study, the proportion of isolates which was $Arg^-Hyx^-Ura^-$ was five times higher for whites than for blacks ($P < .001$) (*9*).

These data may help explain reported racial differences in the incidence of gonorrhea. Age-specific case rates of gonorrhea were reported separately for whites and nonwhites in the United States until 1970. In that year, for the peak age group 20 to 24, the reported incidence of gonorrhea per 100,000 population was 1013 for white men, and 14,061 for nonwhite men (*10*).

Our studies suggest that the higher incidence of gonorrhea among nonwhites is attributable to the symptom-producing strains other than $Arg^-Hyx^-Ura^-$, perhaps because the symptom-producing strains are being transmitted more efficiently or eliminated less efficiently among nonwhite than among white populations. Some evidence supports the second possibility. Darrow found that 28 percent of black men delayed 15 or more days after the onset of symptoms of gonorrhea before seeking treatment, but only 11 percent of white men delayed this long (*11*). The reason for the differences in illness behavior is not apparent, and may relate to socioeconomic status, differences in the availability or acceptability of health care, or attitudes towards illness. In a white population, perhaps infections with symptom-producing strains tend to be treated promptly, and hence eliminated from the population, whereas the $Arg^-Hyx^-Ura^-$ strains are allowed to persist because they produce no symptoms. However, in nonwhite populations, infections with symptom-producing strains may have a better chance of transmission because they are treated after a longer duration of symptoms.

Our findings are of considerable public health significance. The data suggest that the control of gonorrhea among nonwhites may rest on identification and earlier treatment of men with ignored symptoms of gonorrhea. Conversely, the further control of gonorrhea among whites depends to a greater extent upon a reduction in the reservoir of strains which persist because of their ability to cause asymptomatic infection.

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16 December 1976; revised 25 February 1977

Aspergillus oryzae (NRRL Strain 1988)

The technical comment "*Aspergillus oryzae* (NRRL strain 1988): A clarification" by Fennell (*1*) apparently requires further clarification, since Morse has expressed the opinion that "the question remains open" (*2*).

We offer the following additional information that may help settle the question of contaminant versus variant. Our laboratory was one to which Morse sent a subculture of their NRRL 1988 "variant." We confirmed its capability for producing aflatoxins and characterized the mold as typical of *Aspergillus parasiticus*. Since El-Hag and Morse had reported receiving a similar variant from the American Type Culture Collection subculture (ATCC 9362) of the same strain of *A. oryzae* they had received from the USDA Northern Regional Research Laboratory (NRRL), we obtained ATCC 9362 directly from ATCC. This subculture did not produce aflatoxin on any of the substrates usually employed for this purpose, and its culture characteristics were typical of *A. oryzae*. The "variant" was therefore not present in the ATCC master culture, nor, as Fennell reports, was it present in the NRRL master culture. Why should the aflatoxin-producing variant show up in New Brunswick in three separate transfers (two from NRRL and one from ATCC) and not in Washington or Peoria? We suggest the New Brunswick laboratory should have paid more attention to Fennell's admonition that the subculture sent to her from New Brunswick was "heavily infested with culture mites."

Mites are notorious for cross-contaminating mold cultures when infestations become heavy, and their populations spread from either culture or commodity habitats.

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20 December 1976

I would not wish to enter into the fray of the El-Hag and Morse (*1*) versus Fennell (*2*) debate over the identity of the supposed "variant of *Aspergillus oryzae* NRRL 1988" were it not that the implications are frightening. Morse (*3*) chooses to quote paragraphs from a text by Raper and Fennell (*4*) that do nothing for his case. As every mycological taxonomist knows, diversity and variability is one thing, delimitation of species is another. Morse is essentially questioning our taxonomic expertise and our success at applying the concept of species. Raper and Fennell do not remotely suggest that a given specific entity can vary and mutate to become another recognizable species. It is hard to believe that anyone could convince himself that *A. oryzae* could become *Aspergillus parasiticus*, which Morse would have to do in order to make his case watertight. Morse expresses a wish to have the matter closed but yet maintains that the question remains open. There is only one way to close the matter—El-Hag and Morse should realize that from the published evidence the cultures they received became contaminated in their laboratory.

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13 January 1977

Estimating Evaporation: Difficulties of Applicability in Different Environments

Idso *et al.* (*1*) have presented a method for calculating daily totals of evaporation from wet and drying bare soils. They have shown that their technique, which requires only a knowledge of daily solar radiation, surface albedo, and maximum and minimum temperatures in air (screen) and at soil surface, is consistent with bare soil data at Phoenix, Arizona. However, we are unable to accept the rationale behind these empirical relationships which, we suggest, are site-specific. Equation 1 of Idso *et al.* (*1*) assumes (i) that potential evaporation can be subdivided into two parts: that induced by solar radiation and that induced by thermal radiation; and (ii) that the solar component is quantitatively equivalent to net shortwave radiation (S_N). In our opinion, neither assumption can be justified.

Figure 1 of Idso *et al.* (*1*) shows clearly that net thermal (longwave) radiation (L_N) and evaporation (LE) are both energy sinks, and L_N cannot therefore induce part of LE. The two sources of energy for positive nocturnal LE are downward sensible heat transfer from air to the surface and a soil heat flux toward the surface. The combination equation is generally accepted as a valid approximation for potential evaporation LE (*2*):

$$LE = \frac{s}{s+\gamma}(S_N + L_N + G_N) + \frac{\gamma}{s+\gamma} f(u)\,(e_0 - e_a) \quad (1)$$

or alternatively

$$LE = \frac{s}{s+\gamma}(S_N + L_N + G_N) + f'(u)\,(T_{db} - T_{wb}) \quad (2)$$

where s is the slope of the saturation vapor pressure curve with respect to temperature at a characteristic air temperature T_{db}, γ is the psychrometric constant, G_N is the net soil heat flux, $f(u)$ and $f'(u)$ are transfer functions dependent on wind speed, e_0 is the saturated vapor pressure at air temperature, e_a is the actual vapor pressure, and T_{db} and T_{wb} are the dry bulb and wet bulb temperatures of the air. In the case of daily values, G_N will approach zero, and so Eq. 2 may be written:

$$LE = S_N + \frac{s}{s+\gamma}L_N - \frac{\gamma}{s+\gamma}S_N + f'(u)\,(T_{db} - T_{wb}) \quad (3)$$

Thus in estimating 24-hour totals of LE, the quantity represented by the net longwave radiation function $f(L_N)$ of Idso *et al.* may be equated to the last three terms of Eq. 3. Thus $f(L_N)$ is dependent not only on L_N but also on S_N, temperature, humidity, and wind speed.

In arid areas such as central Arizona, there is an annual cycle in the clear-day values of air temperature, wet bulb depression, S_N, and L_N. The first three of these parameters are high in summer and low in winter (with slight differences in phase), and the last parameter reaches more negative values in winter than in summer. It is therefore to be expected that in Arizona, L_N could act as surrogate throughout the year for all elements with the exception of $f(u)$. Although an increase in wind speed will reduce the surface temperature (T_s), it will also make L_N less negative, thus effectively increasing LE through equation 4 of (*1*). We therefore believe that the local success of the relationship of figure 1 and equation 4 of (*1*) is chiefly related to the annual cycles in nocturnal L_N, S_N, T_{db}, and $(T_{db} - T_{wb})$. We agree that L_N is validly approximated for clear nights by equations 3 and 4 of (*1*) and that figure 1 and equation 4 of (*1*) indicate a noncausal relationship between nocturnal values of L_N and LE.

However, the correction of the overestimate of energy contribution from S_N by extrapolation of the nocturnal evaporation expression given in equation 4 of (*1*) has no physical basis that we are aware of. Figure 2 of (*1*) indicates that it happens to work with the data of Idso *et al.* in the short term for days which cover a range of advective conditions, but this does not justify the inference with respect to mechanism.

We also question the concept of figure 3 of (*1*). If the solution of the combination equation is extended to provide an estimate of actual surface temperature, the relationship between the maximums in surface and air temperatures is a function of all the factors in Eq. 3 (*3*). At low radiation levels T_s approaches T_{wb}, and T_s rises significantly above T_{db} only for a combination of high radiation levels and low evapotranspiration rates. It is very likely that the relationship shown in figure 3 of (*1*) exists for the combination of radiation, temperature, wind speed, and humidity in central Arizona. That combination is probably not atypical of various temperate and semiarid regions but is rather different in monsoonal regions characterized by strong seasonal differences in the relationships between those elements.