mentioned whereby prairie dogs moving through the tunnel drive the air out ahead of them and draw it in behind them. Everyone is familiar with the "whoosh" effect observed when subway trains come in. (My thought is that a tight fitting, fast moving, animal could well do this. But I expect that the animal fills only about 1/2 of the tube cross section. The tube radius is 5.64 cm versus an animal diameter of about 8-9 cm. Thus his sweeping efficiency may not be too good and a fairly continuous circulation might be required. Note also that this mechanism would not work during hibernation.)

b. The Bernoulli effect (high velocity, low pressure, and vice versa) is mentioned with no particular indication of the mechanism of getting high and low velocities. Perhaps there is a "mound" effect. There may be a variety of misconceptions about static air pressure; e.g., can the different elevations of openings induce flow simply because of $\Delta p$? In fact, $\Delta p$ is balanced by gravity and it is impossible to vent pollutants to the vacuum of space.

c. A variety of chimney effects are possible; e.g. sucking at all openings due to wind across them and natural convection due to animal warmth below. The day-night cycle could give an effect similar to the breathing cave phenomenon.

d. Finally, if a tube is held vertically just above the ground, would there be flow through it? There will be a flow upward due to the boundary layer velocity distribution effect because of the low velocity and high pressure at the bottom and the high velocity and low pressure at the top. This $\Delta p$ is greater than that inferred from hydrostatics.

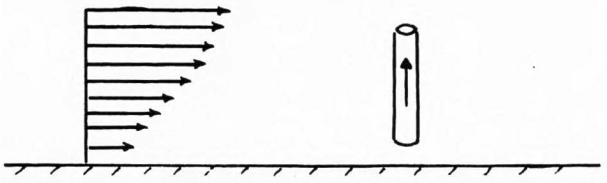

**FIGURE 2. Boundary layer velocity distribution effect.**

You are now encouraged to use any of the above points in your explanation of the tunnel ventilation mechanism. □



## ChE books received

**"How to Find Chemical Information,"** R. E. Maizell, John Wiley & Sons, New York, 1979, 261 pages, $17.95.

Chemical information tools are in a constant state of change. This book will show you how to efficiently locate, use, and in some cases evaluate, chemical data.

**"Fluid Catalytic Cracking with Zeolite Catalysts,"** P. B. Venuto and E. T. Habib, Jr., Marcel Dekker, Inc., New York, 1979 156 pages, $19.50

This book attempts to cover the broad scope of fluid catalytic cracking (using zeolite catalysts), with emphasis on the highly-coupled interactions of the process between the feedstock, the catalyst, the process hardware, and the desired products. Workers in petroleum refining and petro-chemical activities, and those interested in catalysis in general, will use this book as a resource and necessary research tool.