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NEW USES FOR SYNTHESIS GAS

MUNICH—There are many exciting opportunities for biological processing of the "synthesis gas" produced by coal gasification, according to a paper presented at the Third European Congress of Biotechnology by J. Colby from Sunderland Polytechnic and colleagues at the University of Newcastle-upon-Tyne. Synthesis gas, which contains carbon monoxide and hydrogen, can be readily converted to methanol as a feedstock for Imperial Chemical Industries' single-cell protein, "Pruteen." The researchers are particularly interested in using carboxybacteria, aerobic organisms that can grow with carbon monoxide as their sole source of carbon and energy. A strain of *Pseudomonas thermocarboxydovorans*, isolated from sewage by Colby's group, uses CO-oxidoreductase to degrade carbon monoxide. One possible application is as the basis for an inexpensive biological sensor capable of detecting tiny quantities of carbon monoxide in the atmosphere; another is for a filter to remove this colorless, odorless, but highly poisonous gas from industrial effluents. **—Bernard Dixon**

CHARGED UP OVER BIOCHEMICAL FUEL CELLS

MUNICH—Apart from generating electricity (or serving as ultrasensitive detectors), biochemical fuel cells may hold great potential for producing commercially interesting, high-value substances. That forecast was made recently by a group led by Colja Laane of the Agricultural University at Wageningen in the Netherlands. They made their prediction here in a paper delivered during the Third European Congress of Biotechnology.

Laane and colleagues have found that relatively cheap substrates can be converted completely and efficiently to useful biochemicals in both compartments of a fuel cell based on D-glucose oxidase from *Aspergillus niger*. With glucose as raw material, the enzyme in the anode compartment generates glucono-1,5-lactone. This is then transformed non-enzymatically to gluconic acid, a valuable industrial