

# Experimenting on a Small Planet: A Scholarly Entertainment

Av William W. Hay

## 17.2 THE STRUCTURE OF THE ATMOSPHERE

Air changes its temperature as it is compressed or allowed to expand. Rising air cools with expansion because of the reduced pressure from the thinning overlying atmosphere. The air is not losing any energy by becoming cooler, but it is converting the energy of heat into another form, 'potential energy.' Work was involved in raising the gas from a lower to higher altitude against the force of gravity. The energy for that work came from the sensible heat of the air; that is the heat we can measure with a thermometer. The sensible heat was converted to potential (=gravitational) energy as the air rises. This can be converted back to sensible heat when the air descends.