In this issue

Bumps on the head

A blow on the skull is a dramatic event. In a moment, it can transform a perfectly healthy person into a helpless cripple. Among the various causes of head trauma, which include homicidal, suicidal and occupational injuries as well as fall from a height, the most common is traffic accident, a preventable one. Unlike in the Western countries, where over the years there has been a significant decline in the number of accidents and consequent injuries to the brain, head injuries and brain trauma continue to be a serious problem in our country. *Indian Auto* (December 1991) reports that about 40,000 people died and 1.75 lakh persons were injured during the year 1990. A recently held International Conference on traffic safety estimated that 1% of GNP is lost annually due to road accidents. Increase in vehicular traffic, poor road conditions and lack of traffic sense among vehicle drivers contribute in large measure to the rising rate of accidents and result in mortality and morbidity.

There can be no arguments on the necessity to improve the measures for prevention of accidents and for management of the victims. Newer imaging techniques such as computerized axial tomography and magnetic resonance imaging have helped in the proper evaluation of patients with head injury. Thanks to the availability of sensitive biochemical markers, it is also possible to assess the severity and extent of brain damage. However, to the neurosurgeons, management of head injury still remains a challenge. Several physical and physiological effects of trauma on the skull and the brain demand separate modalities of treatment. The immediate effect of physical impact on the head is followed by haemorrhage, brain distortion, alterations in blood flow and systemic effects secondary to brain injury.

Several biological models are now available to correlate mechanical events and impact forces to disturbances at cellular and subcellular levels. Biomechanics of head injury has received the attention of many investigators, who continue to conduct extensive and excellent studies using both animal and human models. These studies have helped not only in understanding the tissue tolerance and response to contact and inertial forces, but also in planning rational measures for prevention of head injury and reduction of the effects of trauma to the skull. Dinesh Mohan reviews (**page 749**) the mechanisms of brain damage in head injuries, discusses criteria for studying limits of tissue tolerance to injury and suggests methods for reduction in the incidence of accidents on the road.

C. C. K.

Reducing fullerenes

The fullerenes are characterized by the unrelieved monotony of their surfaces, rich in π electrons. It is not surprising that chemists have invested much effort in exploring the chemical reactivity of these novel carbon clusters. While buckminsterfullerene (C_{60}) has been intensively studied, much less attention has been focused on its relative, C_{70}, largely as a consequence of the low synthetic yields of the latter. Furthermore, while all carbon atoms in C_{60} are identical, C_{70} is much less symmetrical, having as many as five different carbon atoms and eight distinct C–C bonds. The practical problem of sorting out the isomers formed in any chemical reaction of C_{70} is, therefore, formidable. Theoretical investigations of C_{70} reactivity thus appear as a valuable alternative. On **page 768**, Rathna and Chandrasekhar describe molecular orbital calculations on the stability of vicinal dihydrides of C_{70}, which permit an assessment of the relative stabilities of the eight possible $C_{70}H_2$ products resulting from the addition of hydrogen to double bonds unrelated by symmetry. The results suggest that reactivity of double bonds is a function of their geographical location in the ellipsoidal C_{70} molecule.

P. B.