as long as 12 days revealed that even chronic intoxication did not significantly alter particle strands assocd. with zonulae occludentes between tongue processes and their adjacent layers of myelin. Furthermore, expts. using electron-dense tracers demonstrated that the permeability characteristics of these junctions were unchanged. Following s.c. perineural injection of lanthanum of horseradish peroxidase (HRP), the tracers easily penetrated the optic nerve and were uniformly distributed throughout its parenchyma. While only limited amts. of lanthanum could penetrate myelin and enter the vacuoles, no HRP was found within the large myelin vacuoles after either brief or long-term exposure to I. In contrast to the tight junctions, some modifications were obsd. in the distribution of other intramembranous particles assocd. with myelin lamellae adjacent to swollen regions of the sheath. These alterations primarily involved formation of multifocal, particle-free elevations which corresponded to areas in which the fused inner glial leaflets, forming the major dense line, had sepd. Such particle-deficient areas were absent in myelin of control as well as normal sheaths of I-intoxicated animals. Thus, these findings demonstrated that the structural and physiol. characteristics of a tight junctional component of myelin were not affected by I. Sparing of these junctions may account for the relatively low incidence of demyelination and reversible nature of I lesions. The development of particle-deficient blisters on glial leaflets suggests, however, that I may be capable of modifying other aspects of the chem. organization of myelin, thereby producing local alterations in the compact arrangement of myelin lamellae.

89: 37490y **Respiratory response in nonanesthetized cats following respiratory tract irritation with sulfur dioxide.** Hanacek, Jan; Korpas, Juraj (Lek. Fak., Univ. Komenskeho, Bratislava, Czech.). *Bratisl. Lek. Listy* 1977, 68(5), 551–8 (Slo). SO_2 administration via tracheal cannula to unanesthetized cats induced an atypical coughing reaction and secondary effects. The SO_2 induced cough was similar to that induced by mech. irritation, however, the SO_2-induced cough was assocd. with hyperventilation. A min. dose of 1% SO_2 in a 2 mL vol. was necessary to induce the cough. Ammonia and xylol did not induce the cough reflex.

89: 37491z **Experimental study of the sensitising activity of aliphatic chlorinated hydrocarbons.** Shmuter, L. M.; Kashin, L. M. (Inst. Universh. Vrachei, Kharkov, USSR). *Gig. Tr. Prof. Zabol.* 1978, (3), 57–9 (Russ). The toxic effects and allergic reactions in rabbits due to chronic inhalation and intracutaneous administration of *dichloroethylene* [25323-30-2], *dichloroethane* [1300-21-6], MeCl [74-87-3], and CCl [56-23-5] were studied. Both the toxic effects and allergic reactions, as obsd. by basophile breakdown, leucocyte lysis, and sensitization increased in severity with increased exposure or concn. of the aliph. chlorinated hydrocarbons.

89: 37492a **Metal content in some species of fish in the northern Adriatic Sea: comparison of two sample areas.** Majori, L.; Nedoclan, G.; Mudonuti, G. B.; Daris, F. (Inst. Hyg., Univ. Trieste, Trieste, Italy). *Rev. Int. Oceanogr. Med.* 1978, 49, 41–3 (Eng). Hg concns. in fish taken from the Gulf of Trieste near Punta Sdobba during the winter of 1974–5 and the winter of 1975–6 were 0.152 and 0.176 $\mu g/g$ for *Mytilus galloprovincialis*, 0.008 and 0.112 $\mu g/g$ for *Mugil cephalus*, and 0.393 for *Mullus barbatus*, reflecting the Hg pollution previously obsd. in this area. Hg concns. in fish from an unpolluted area near Lazzaretto were 0.029 and 0.034 $\mu g/g$ for *M. galloprovincialis*, 0.012 and 0.035 $\mu g/g$ for *M. cephalus*, and 0.040 $\mu g/g$ in *M. barbatus*. Concns. of Cd, Co, Cu, Fe, Mn, Ni, Pb, and Zn did not vary in fish from Lazzaretto and Punta Sdobba.

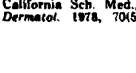
89: 37493b **Comparative evaluation of the toxicity of floc= culents based on polyethyleneimine in acute and subacute experiments.** Kinsirskii, A. S. (USSR). *Metody Sint. Put. Issled. Polietilenimina Nar. Khoz.* 1976, 92–6 (Russ). Edited by Zhuk, D. S. "Nauka": Moscow, USSR. The LDso values of different mol. wt. polyethylenimine [9002-98-6] administered orally to various animals, were 1100–2650 mg/kg. Mutagenic effects in bone marrow cells and chromosomal aberrations were not apparent after acute or subacute expts.

89: 37494c **Trace element content of human hair determined using neutron activation analysis as a monitor of effects of exposure to environmental metals.** Dutkiewicz, Tadeusz; Paprotny, Wojciech; Sokolowska, Dobrochna; Kulka, Elzbieta; Wayriachowska, Ewa; Dybczynski, Rajmund; Starlinski, Slawomir (Cent. Environ. Prot., Inst. Environ. Dev., Katowice, Pol.). *Chem. Anal. (Warsaw)* 1978, 23(2), 261–72 (Eng). Neutron activation anal. of hair samples from 8–10 yr old school children from an industrial area permitted identification of 17 elements which were indicative of the type of pollution in that area. A. Janowski

89: 37495d **Changes in content of β-carotene and vitamin C in parsley plants in the vicinity of a highway.** Flueckiger, Walter; Flueckiger-Keller, Heidi (Bot. Inst., Univ. Basel, Basel, Switz.). *Qual. Plant. - Plant Foods Hum. Nutr.* 1978, 28(1), 1–9 (Ger). Potted parsley plants grown from May through Sept. at the edge of a highway and 30 m from the highway showed decreases in the *β-carotene* [7235-40-7] and *ascorbic acid* [50-81-7] contents which were inversely proportional to the distance from the road. Leaves harvested at the edge of the road in July and Sept. contained 38 and 55%, resp., less β-carotene than leaves of control plants grown 200 m from the roadway. Similar, but not as marked results were obsd. for ascorbic acid. Leaves grown next to the roadway contained 23 and 6% less ascorbic acid in July and Sept., resp., than control plants. However, in Sept., the β-carotene contents were generally higher and ascorbic acid contents were generally lower than in July. Automobile exhaust air pollution was suggested as the cause of these changes, and the effect of climate was also noted.

89: 37496e **Induction of porphyrin synthesis in chick embryo liver cell culture by synthetic polychlorobiphenyl isomers.** Kawanishi, Shosuke; Mizutani, Tamio; Sano, Seiyo (Fac. Med., Kyoto Univ., Kyoto, Japan). *Biochim. Biophys. Acta* 1978, 540(1), 83–92 (Eng). The effects of a series of synthetic di-, tetra-, and hexachlorobiphenyl isomers and com. polychlorinated biphenyls on porphyrin biosynthesis in chick embryo liver cells in culture were examd. 3,4,3',4'-Tetra- [33284-13-3] and *3,4,5,3',4',5'-hexachlorobiphenyl* [32774-16-6] isomers were the most active inducers, and were approx. 20 times as active as *1,4-dihydro-3,5-dicarbethoxy-2,6-trimethylpyridine* (DDC) [632-93-9] in porphyrin prodn. 3,5,3',5'-Tetra- [33284-52-5] and *2,3,4,2',3',4'-hexachlorobiphenyl* [38380-07-3] isomers were moderate inducers, and were approx. 2.0–2.5 times as active as DDC. *2,4,6,2',4',6'-Hexachlorobiphenyl* [33979-03-2] showed the same activity as DDC. 4,4'-Di- [2050-68-2], 2,3,2',3'-tetra- [38444-93-8], 2,4,2',4'-tetra- [2437-79-8], and *2,6,2',6'-tetrachlorobiphenyl* [15968-05-5] were weak inducers and 2,5,2',5'-tetra- [35693-99-3] and *decachlorobiphenyl* [2051-24-3] isomers were found to be inactive. *Kanechlor-400* [12737-47-0] was the strongest inducer among the com. poly= chlorinated biphenyls investigated. The structural requirements for potent porphyrin inducing activity of chlorobiphenyl isomers were the para and meta substituted structure causing a more highly conjugated and nearly coplanar conformation. Induction caused by some chlorobiphenyls was subject to feed back repression by end product heme. In addn., the metab. of chlorobiphenyls in mice was influenced by the unsubstituted pairs of C atoms in the mol. Strong inducers may displace heme directly and incorporate into a hydrophobic pocket of the aporepressor protein, thus causing an induction of δ-aminolevuline acid synthetase.

89: 37497f **Effects of 4-tert-butyl catechol on tissue cultured melanocytes.** Mansur, Joao DeSouza; Fukuyama, Kimie; Gellin, Gerald A.; Epstein, William L. (Dep. Dermatol., Univ. California Sch. Med., San Francisco, Calif.). *J. Invest. Dermatol.* 1978, 70(5), 275–9 (Eng). Depigmenting effects of



4-t-butylcatechol (I) [98-29-3] were investigated using tissue cultured melanocytes of adult guinea pig. Black guinea pig ear epidermis was trypsinized, suspended in HMR Eagle media (5 × 10^5 cells) supplemented with 10% *calf serum*, and seeded in Petri dishes. On the 5th day of culture, I dissolved in DMSO was added to the media, and the central area of Petri dishes with large nos. of melanocytes (but not keratinocytes) present were examd. by light and electron microscopy. After 6 h of treatment with 1.5 × 10^{-3} mg I/mL of media, ~15–30% of melanocytes detached and ~50% of the remaining cells showed reversible changes in their shapes. An increase of I concn. to >2 × 10^{-3} mg/mL of media resulted in larger nos. of melanocyte deaths. The surviving cells contained numerous, but ultrastructurally unusual premelanosomes and melanosomes. In addn., microfilaments showed a wavy appearance. Tissue culture systems apparently provide an advantage over in vivo studies because toxic effects can be detected within a short period of culture.

89: 37498g **Transfer of polychlorinated biphenyls to the fetuses and offspring of mice.** Masuda, Y.; Kagawa, R.; Takudome, S.; Kuratsune, M. (Daiichi Coll. Pharm. Sci., Fukuoka, Japan). *Food Cosmet. Toxicol.* 1978, 16(1), 33–7 (Eng). Mice were fed *Kanechlor-500* (KC-500) [37317-41-2] at a dietary level of 0.01 (control), 0.94, 8.4 or 86 ppm from the day of insemination until day 18 of pregnancy and were then killed. The amts. of polychlorinated biphenyls (PCBs) present in the whole body, liver and fetuses of the mice were, resp., 6–16, 0.8–3, and 0.1–0.2% of the total PCB intake regardless of the dietary level of PCB, showing that transplacental transfer of PCBs to fetuses occurs to a relatively small degree. Other pregnant mice were fed a diet cntg. 0.01 or 0.94 ppm KC-500 and maintained on this until their offspring were 5-wk-old. The young animals were killed at weekly intervals from birth and analyzed for PCBs. These offspring contained 100 times or more PCB compared to the fetal PCB levels. This increase in offspring PCB levels was attributed to higher PCB content in the milk of the mothers nursing these pups.

MONS 009115