Science

PCB's may be common in humans . . .

Polychlorinated biphenyls (PCB's), known to be widespread in fish and wildfowl, appear to be common in humans also, says Dr. Anne R. Yobs of the Environmental Protection Agency. She told a federally sponsored meeting on PCB's last month that an EPA analysis of 593 human tissue samples collected from 36 hospitals in 17 states revealed that 33.6% of the samples contained greater than 1 p.p.m. PCB and another 30.1% contained detectable quantities of PCB. Dr. Harold A. Price of the Michigan department of public health told the meeting he found that more than 41% of 60 human adipose tissue samples collected in Michigan contain more than 1 p.p.m. PCB.

. . . but levels decline elsewhere

PCB levels in two Green Bay tributaries meanwhile have dropped sharply over the past year, says University of Wisconsin water chemist Gilman D. Veith. He notes that "PCB levels in Peshtigo and Oconto river waters dropped from 0.31 and 0.45 p.p.b. respectively in November 1970 to less than 0.01 p.p.b. last summer." Dr. Veith believes that the decline is probably a direct result of Monsanto Co.'s restrictions on sales of PCB's. He adds, however, that waters of the Fox river, which flows through the city of Green Bay, have not yet shown a similar decline in PCB levels.

New isotope of silicon formed

A new radioactive isotope of silicon, silicon-33, has been discovered at Brookhaven National Laboratory. Dr. David Alburger and Dr. David Goosman last week told an American Physical Society meeting that they formed the isotope by bombarding oxygen-18 atoms with oxygen-18 ions from Brookhaven's new tandem Van de Graaff accelerator. The colliding particles give off two protons and a neutron to form silicon-33 which emits gamma radiation with a half-life of 6.3 seconds. Five radioactive and three stable isotopes of silicon are already known.

Apollo 16 experiment

A cosmic ray detector will be used in a new experiment to be flown as part of the Apollo 16 mission, scheduled to be launched in March. The results of the experiment are expected to provide new data on low-energy, heavy cosmic ray particles—the nuclei of elements from fluorine to zinc in the periodic table. The experiment cannot be performed on earth because of the earth's magnetic field and atmosphere.

High energy neon ions

Neon ions with an energy of 8.9 b.e.v. have been achieved at the Princeton particle accelerator, says director Milton White. Such particles, Dr. White tells C&EN, promise to be three to five times as effective as x-rays in destroying cancerous cells, while delivering to healthy cells only one fortieth the energy of x-rays. The Princeton workers form the high energy ions by using a carbon stripping foil to produce Ne^{8+} ions, which are then injected into the synchrotron with an energy of 8 m.e.v. and accelerated in a vacuum of 10^{-8} torr.

Intelligence and the womb

An increased incidence of high intelligence is observed among children who, because of adrenal malfunction, received high doses of the male hormone androgen while still in the womb, says Dr. John Money of Johns Hopkins University. Writing in the UNESCO quarterly, *Impact of Science on Society*, he says that 60.1% of 70 subjects who received androgen prenatally had IQ's greater than 110 and 12.9% had IQ's greater than 130. In a normal (untreated) group, the incidence of such IQ's should be 25.0% and 2.2%, respectively.

Cell changes in women

Cell changes caused by the menstrual cycle may protect younger women from bronchial cancer, according to Dr. Jack Chalon, Dr. Dolores Loew, and Dr. Louis Orkin, all of Yeshiva University's Albert Einstein College of Medicine. Their studies show that in women of reproductive age the nuclei of cells lining the air passages move within the cells in relation to the phases of the menstrual cycle. In men and older women, the nuclei do not move. "It is tempting to correlate these findings with the much lower incidence of bronchogenic carcinoma in women," the physicians say.

Beginnings of universe

The beginning of the universe may date back some 20 billion years—twice its generally estimated age—and its distance scale may be twice as large as generally thought. This is the conclusion reached by Dr. George B. Abell of the University of California, Los Angeles, and related last week in Philadelphia at the 138th meeting of the American Association for the Advancement of Science. Dr. Abell and co-workers accumulated data during 13 years of telescopic observations of giant galaxy clusters, clusters ranging up to billions of light years away and among the most distant objects visible from earth.

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Mercury in prehistoric fish

High levels of mercury have been found in the remains, mainly bone, of 12 of 17 samples of prehistoric fish. Dr. Edwin Wilmsen, Curator of the University of Michigan's Museum of Anthropology, told the AAAS meeting that samples were taken from remains at sites in Michigan and Illinois (100 B.C. to A.D. 400), and a pre-Inca site in Peru (A.D. 1200).

key issues as Congress draws up this landmark legislation. Coverage of intermediate chemicals is one: the chemical industry argues that these are covered under existing air and water pollution rules (or will be under the new water pollution legislation) and hence there's no need to control them under this legislation.

Whether Congress will spell out, in part, what type of testing new chemicals will have to undergo or leave this up to the Environmental Protection Agency will be another issue. Sen. Spong's amendment specifically suggests that testing cover carcinogenesis, teratogenesis, mutagenesis, persistence, and cumulative or synergistic effects of other chemicals. The Nixon Administration proposal simply calls for EPA to set standards for test protocols.

Push. One feature in a similar House bill provides for setting up a National Registry of Chemical Substances. This feature could receive a strong push toward inclusion in a toxic chemicals law if proponents of a similar registry or chemicals clearinghouse concept succeed in having it on the agenda for the upcoming United Nations Conference on the Human Environment in Stockholm.

Envisioned as a federal data collection center for toxic chemicals (and dissemination if data is not deemed confidential), the registry would be based upon a standard classification and retrieval system. All new chemicals would have to be registered before they could be produced commercially, whereas existing chemicals would be registered, and thus subject to federal tests, under priorities set by EPA. Unlike chemicals covered in Sen. Spong's proposal, a new chemical in the registry would not have to be federally approved prior to marketing until such time as a test protocol covering that chemical became final.

Health. Without question one of the major issues before Congress this year—and a key concern of the medical-drug community—will be legislation creating some form of national health insurance. There are a raft of differing proposals for such insurance with the counter plans of President Nixon and Sen. Edward Kennedy (D.-Mass.) generating considerable political friction. Just how this situation will sort itself out before voters go to the polls is uncertain. For drug makers, the key issues will be whether any plan adopted includes a federal formulary and/or maximum price lists.

Closely related in its impact on the pharmaceutical industry is the omnibus drug bill being pushed by Sen. Gaylord Nelson (D.-Wis.). A potpourri of new and old proposals, the bill in its entirety is not likely to progress very far. However, sections of the legislation could well be incorporated into other bills standing better chances of enactment.

Food additive legislation likely will be reintroduced by Sen. Nelson. The Nixon Administration has indicated a willingness to extend requirements for food additive testing to possible mutagenic and teratogenic effects, but at the price of giving an element of discretion to FDA in determining whether or not to ban an additive. The mood of Congress, however, still appears to be behind retaining the Delaney Amendment, the anticancer clause that felled cyclamates, and getting such discretion will not be easy.

FDA's budget will go up, probably not significantly enough to make a major difference in how the agency handles its far-flung food, drug, and consumer safety responsibilities. This situation could well change, however, if sweeping new consumer safety legislation progresses. Soon to be considered by the Senate Commerce Committee in closed sessions is a proposal to create an independent Consumer Safety Agency incorporating FDA and HEW's division of biologics standards.

Pensions. Legislation regulating pension plans will get a full airing but there's doubt that Congress will complete action this year. Vesting rights —either under a Nixon Administration plan for rights to 50% of a pension when age and years of coverage total 50 or under other plans—will be a major issue.

The outlook for enactment of patent reform legislation is muddled now and may remain so for months. Senate majority Leader Hugh Scott (R.-Pa.) may decide to reintroduce his amendment for clarifying patent licensing situations, but much hinges upon how the "swing vote" of Sen. Hiram L. Fong (R.-Hawaii) is cast—either in a Patent Subcommittee reconsideration of the amendment earlier defeated 3 to 2, or in the full Judiciary Committee's deliberations.

As the bill now stands, it contains some good features but it sharply boosts costs of getting a patent, excludes utility in research as a condition for patentability, and fails to make it an infringement to import into the U.S., without authority, a product made in another country by a process patented in the U.S. Many patent attorneys object to provisions requiring oaths and patentability briefs, but some say they could live with these provided that the Scott amendment were reinstated. One favorable indicator for the amendment: the Justice Department's chief trustbuster, Richard McLaren, has now left, and thus there may be a soft-pedaling of antitrust/antipatent pressure from Justice.

Technology. New legislation may be required if the Administration opts to include in its proposed New Technology Opportunities Program (NTOP) tax breaks to stimulate industry R&D or a revision of U.S. antitrust laws to allow companies to cooperate in R&D efforts. The objective of NTOP is to develop an overall federal policy that will stimulate innovation in industry, make greater use of technology to solve social problems, and improve the U.S. competitive position in world markets. Sen. Kennedy, meanwhile, is drawing up legislation to help small firms take advantage of technological opportunities.

An outline, if not the details of the Administration program, has been more or less promised for unveiling by the President in his State of the Union address. Administration sources indicate that certain existing projects such as urban transportation and solid waste likely are to get increased emphasis under the new program.

Reshuffle. White House observers expect NTOP to consist mostly of a reshuffle and a new emphasis on existing projects in various federal agencies, with little new federal money. For one thing, they note that the Administration would be hard put to find the money for a massive new program. For another, they point out that a program requiring new legislation would likely be received by a Democratic-dominated Congress with a great deal of skepticism.

One proposal aimed at redirecting portions of the nation's science and technology effort and putting unemployed scientists and engineers back to work—economic conversion legislation sponsored by Sen. Kennedy—may get an early test in the Senate. The Senator plans to get the proposal, which contains an amendment to spend $1 billion over the next three years to design and develop new cities, to the Senate floor for a vote early this year.

All of these legislative proposals will not pass in the next session, if for no other reason than 1972 is an election year. With the White House, all House seats, and one third of the Senate seats up for grabs, the session is certain to be short and sharply political.

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