

9596. DRUYAN, E. A. (F. F. Erisman Mosc. Res. Inst. Hyg., Moscow, USSR.) Spektrofotometricheskoe opredelenie trikrezilfosfata i dibutilfosfata pri nizh sovmesnom priustsvii v vozdukh. [Spectrophotometric determination of tricrezilphosphate and dibutylphosphate jointly present in air.] GIG SANIT 37(2): 100-102, 1972.--A method was developed for determining levels of toxic, volatile plasticizers commonly used in flooring materials. Polymeric materials based on polyvinyl chloride (PVC) and coloxylin resins often contain tricresylphosphate (TCP) and dibutylphthalate (DBP) as plasticizers. To determine the concentration of each substance when both were present, alcoholic solutions of TCP and DBP at concentrations of 10 and 30 $\mu\text{g/ml}$ were measured spectrophotometrically at 2 wavelengths: TCP absorbs intensely at 215 nm and DBP, at 225 nm. A calibration curve was constructed. An alternative method involves measurements at 220 and 225 nm. Concentrations are calculated by the solution of 2 simultaneous Fierord equations. Experiments were performed on linoleum samples 100 cm^2 , at 20 and 40°, kept in conical flasks. After 24 hr, air samples were withdrawn at a rate of 0.5 l/min into a sorbent charged with ethanol (with cooling). Optical density was determined at 215, 220 and 225 nm and TCP and DBP concentrations determined mathematically. The error of determination of TCP or DBP in the mixtures did not exceed 20%, which was satisfactory considering the low concentrations involved.--M. D. S.

9597. GRANGER, JEAN-MAURICE. (Inst. Urbanisme, Univ. Montreal, C. P. 6128, Montreal 101, Que., Can.) Computer mapping an aid in air pollution studies: Montreal region study. SARRACE-NIA 15, 43-49, illus. 1972. [Fr. summ.]--This article discusses: the appropriate selection of a set of local factors chosen as useful indicators, given the type of urban pollution; and the optimal spatial distribution of the required data over either the urban or rural zones of the region. The technique is applied to the Montreal, Quebec (Canada) region and allows an almost instant appraisal of the intensity of atmospheric pollution.--D. T. S.

9598. ESPLY, W. H., Jr. and G. H. WARD Jr. (TRACOR, Inc., 6500 Tracor Lane, Austin, Tex. 78721, USA.) Estuarine water quality models. WATER RES 6(10): 117-1131, illus. 1972.--The results are reviewed of a study (Ward and Espley) undertaken by the Environmental Protection Agency to evaluate the use of models--mathematical, hydraulic, and electrical analog--for simulating pollution processes in estuaries and predicting results of proposed pollution control actions.--D. T. S.

9599. SALYAMON, G. S. and N. A. PETROVA. Opredelenie mikro-grammovykh kolichestv polietilenaminov v vode. [Determination of microgram quantities of polyethylene polyamines in water.] GIG SANIT 37(5): 59-63, 1972.--The sensitivity of colorimetric analysis of polyamines, based on interaction with eosin and copper sulfate, increases with a decrease in pH of the medium. By adding citrate buffer solution, pH 2.5-2.7, it reaches 0.006 mg/l for polyethylenediamines (PEI) and 0.02-0.2 mg/l for polyethylene polyamines (PEPA). The Cu-eosin reagent permits analysis of high-molecular PEPA in the presence of low-molecular PEPA. Total high-molecular ethyleneamines and low-molecular amines can be determined colorimetrically using p-nitrodiazobenzene. PEPA can be analyzed in the presence of PEI using the known colorimetric reaction for secondary amines with 1,2-naphthoquinone-4-sodium sulfonate. The sensitivity is high (0.02 mg/l).--M. D. S.

9600. FILIPPOV, A. P., V. K. KOMLEV and V. V. MAL'TSEV. (All-Union Res. Inst. New Constr. Mater., Moscow, USSR.) Metodika gazo-khromatograficheskogo issledovaniya letuchikh veshchestv, vydelyaemykh v vozdukh polimernymi stroitel'nymi materialami na osnove polivinilkhlorda. [Gas-chromatographic analysis of volatile substances emitted into the air by construction polymers with a polyvinylchloride base.] GIG SANIT 37(6): 67-68, illus. 1972.--Analysis was made after a preliminary concentration. This method can be used for quantitative and qualitative comparisons of sanitary-hygienic conditions.--M. D. S.

9601. MADEYSKI, A. (Inst. Balneo- Climatol., Poznan, Pol.) O niektorych problemach zabezpieczenia optymalnego srodowiska w uzdrowiskach. [Some problems involved in optimal protection of the environment in spas.] BALNEOL POL 16(3/4): 241-246, 1971 [reced. 1972].--Health resorts should be away from urban agglomerations. The natural capacity of the environment should not be overreached. Industrial plants should be erected far away from these places. Noise, water and air pollution should be avoided.

--(Courtesy NSF PL 83-480). F. W.

9602. BRODNIOWICZ, A. and B. TUROS. (Acad. Phys. Educ., Warsaw, Pol.) Aspekty higieniczne ochrony uzdrowisk przed hałasem. [Hygienic aspects of spa protection against noise.] BALNEOL POL 16(3/4): 223-239, illus. 1971 [reced. 1972].--The most important aspects of the problem (next to the legal aspect) is the planning of highways, streets, town quarters, industrial centers and airports,

while taking into account the factor of quietness. Calm has a beneficial effect in the treatment of many diseases.

--(Courtesy NSF PL 83-480).

9603. KROTKOV, F. G. Nauchno-technicheski progress, vnesnyaya sreda i chelovek. [Scientific-technical progress, the environment and man.] GIG SANIT 37(6): 3-9, 1972.--In this literary report, the scientific-technical progress of Soviet industry, medicine, etc., is described. Aspects of the human environment, e.g., air, H_2O , soil, and noise pollutions, their effects on man and protective and preventive measures to be undertaken, are discussed. General aspects of studies conducted in the USA and USSR are illustrated. Concern is expressed over environmental changes produced by scientific-technical progress and a request is made to utilize scientific-technical knowledge to remove harmful materials from man's environment.--M. D. S.

9604. LANGE, H. J. and R. REIHER. (Inst. Med. Datenverarb. Ges. Strahlen Umweltforsch., Tech. Univ. Muench., Arabellast. 4/1, 8 Muenchen 81, West Ger.) Datenverdichtung bei der Auswertung multivariater epidemiologischer Studien. [Data reduction in the evaluation of multivariate epidemiological studies.] METHODS INF MED 11(4): 253-257, 1972. [Engl. summ.]--The problems of statistical analysis in an epidemiological cross-sectional study of 13,000 workers with 300 qualitative and quantitative characteristics per case were discussed, with the objective of determining the significance of chronic inhalable noxae, present at the place of work, for chronic bronchitis and pulmonary emphysema. Models for estimation of dust exposure in previous years (the causative factor), for reduction of the number of symptom-groups and elimination of modifying factors were presented. A comprehensive index was computed, in analogy to the Staubsummenwert (cumulative dust exposure index) used in the coal mining industry of the Federal Republic of Germany. The decision-tree method was used to reduce the large number of qualitative and quantitative symptom-groups. Modifying factors were considered by eliminating individual cases, by constructing sub-groups and by reference to nominal values.

9605. ASTRAND, IRMA, P. FUGELLI, C. G. KARLSSON, K. RODAHL (Inst. Work Physiol., Gydas vel 8, Oslo 3, Norway.) and Z. VOKAC. Energy output and work stress in coastal fishing. SCAND J CLIN LAB INVEST 31(1): 105-113, illus. 1973.--Energy expenditure in 14 fishermen engaged in fishing was determined by direct measurement of O_2 uptake and by indirect assessment based on continuous recording of the heart rate. Urinary excretion of catecholamines was assayed as an index of stress response. The average energy expenditure during all activities on board for the whole work day amounted to the equivalent of about 1 liter O_2 uptake per min, corresponding to about 39% of the fishermen's maximal aerobic power, with peaks up to 80%. On the average, about a 10-fold increase in epinephrine and a 4-fold increase in norepinephrine excretion were observed during work as compared to resting night values.

9606. HARSTELA, PERTTI. (Inst. For. Fenn., Helsinki, Finl.) Puunkorjuumenetelmien ergonominen kehitys ja eraat tyontekijaan kohdistuvat fyysiset vaikutukset. [The ergonomic development of timber harvesting work methods and some physical effects on workers.] FOLIA FOR (HELSINKI) 131, 1-22, illus. 1971 [reced. 1972]. [Engl. summ.]--A literature review traces the ergonomic development in Finland in the late 1960s and early 1970s. It examines the development of work methods for the power saw from the point of view of physiological stress and the time the worker is exposed to vibration. Ways were sought to change the work methods to reduce their untoward effects on the worker. Forest work methods were developed by simplifying labor-intensive methods and by increasing mechanization. Mechanization changes ergonomic problems from the consequences of the use of muscular energy to the effects caused by the use of nervous energy and psychic stress and the effects caused by the machines such as vibration, swaying and noise and the working conditions of the machine operator. Labor-intensive methods were simplified by increasing the length of timber, which increased the stress of bunching, and by simplifying bucking and limbing, which increases the time of exposure to vibration since it necessitates limbing by power saw. The omission of measuring in the light phase of work increased the intensity of the work. Felling alone for processors requires less muscular energy expenditure than the traditional methods of work, but the labor output is smaller than in felling in connection with other work. Working in deep snow is an exception where felling alone is heavy work as it requires a lot of movement. Methods can be developed that are ergonomically better, e.g., by leaving bunching work to machine and by phasing the bunching into small lots. However, reducing the bunching work will add to the disadvantages of power sawing. Reducing the vibration of the power saw, adequate breaks, shortening the daily sawing time and using a correct sawing technique seem to be the only current methods for reducing the risk of vibration damage.--J. L. F.

9607. REINHOLD, R., K. RASCHE and W. WERNER. (Bezirksnsp. Gesundheitsschutz Betr., Kurt-Beithel Strasse 39, 90 Karl-Marx-Stadt, East Ger.) Hochfrequenter Laerm und seine Wirkung auf den