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BETTER PROTECTION OF THE ENVIRONMENT NEEDED

Tirana ZERI I POPULLIT in Albanian 9 Mar 77 p 3

[Article by Tahir Cenko, director of the Directorate of Hygiene and Epidemiology in the Ministry of Health: "Protection of the Environment from Pollution Is Accomplished by Technical-Organizational Measures and With the Mobilization of Everyone"]

[Text] Viewing the individual as its most valuable capital, the party has been giving special care to preserving the health of the people. One expression of this concern is the repeated measures taken by the state to protect the earth, natural resources, water and air from various kinds of pollution. Protection of the environment has to do with the protection and strengthening of the people's health and as such it is a great political, social and economic problem which provides a number of important duties for state organs, social organizations, and all citizens.

The main guidelines which deal with the problem of protecting the environment from pollution establish relevant organs which have to do with guiding and organizing the work and with checking on the environment as a whole. Such groups include the commissions under the ministries and the executive committees of the peoples councils in the districts, and environment protection groups in enterprises, institutions, and agricultural cooperatives. Thus, for example, a correct understanding of this problem by these groups has caused a series of measures to be taken to safeguard the purity of the environment at the printing combine in Tirana, the petroleum processing plant in Ballsh, the ferrous metallurgy plant in Elbasan, wood processing plants, and so forth.

The situation is completely different in capitalist and revisionist countries, where all the popular protests against environmental pollution, which seriously endangers their health, meet with the determined resistance of the capitalist owners, who are only interested in securing profits as large as possible.

In our country, measures to protect the environment from pollution are implemented correctly and quickly because they are done with the active participation of the broad working masses and of all of society. And this has caused hygienic-sanitary conditions in our cities to improve more and more every day.

The erection of new residential buildings, the asphaltting of roads, the extension of green areas, the expansion of sewage networks, and the building of water systems even in the most remote villages are important steps which help protect the environment from pollution.

An important step is to collect various industrial waste products either to make them harmless or to put them back into the technological cycle. Thus, at oil-producing places large holes have been dug near producing wells to collect waste products. This is where one collects and reprocesses the oils which are used during cleaning machinery, while the waste products and metallic chips which are left from the production process are pressed and sent back for melting. Likewise, another step which helps to reduce the pollution of the environment of residential areas is the improvement of the sewage drainage systems, especially in coastal towns, as well as gradually building these systems in residential centers where they do not exist. Special care is also given to the collection and processing of the refuse of the population.

But although these measures have been taken and the environment is relatively clean, one must keep in mind that another source of environmental pollution is the development of industry, especially the mining and enriching of minerals, the extraction and processing of naphtha, the metallurgical industry, the construction materials industry, various chemical factories and other physical factors. Thus, for example, causes of environmental pollution include paper mills, TEC [Thermo-electric power plants], boilers, cement factories, chemical factories, and so forth.

Some inspections made by organs of the Inspectorate for Protecting the Environment from Pollution, as well as an inspection made in the past by the State Inspection in cooperation with the Ministry of Health, show that this problem is not regarded seriously everywhere. More concern must be shown by the ministries and the executive committees of the peoples councils in the districts, and also the commissions created for this purpose which have not properly implemented the duties assigned by the decision of the Council of Ministers. In some districts, for example, it has been observed that even the environmental protection groups (G.M.A.) created under the enterprises and agricultural cooperatives have not always analyzed these problems and have delayed with the tasks which they planned themselves. Thus, the meat combine in Tirana has not put into operation the water purification plant which was required of it. Likewise, the rules for dumping refuse in the designated places have not always been followed, as is the case in the city of Durres where they dumped it behind a construction enterprise, or on the riverbank between two bridges in Rrogzohne, on the seacoast in Vlore, and so forth. Responsibility for environmental pollution is also borne by communal enterprises which have not picked up garbage at the proper time.

Initially, the environmental protection groups at work centers planned their work well and took steps to make observations and studies on environmental pollution, but now the work which was begun is not being pursued with the same intensity. A factor in the inadequate work done in taking steps concerned

with protecting the environment from pollution is also the narrow view of this problem adopted by many work centers and agricultural cooperatives which have reduced the measures simply to cleaning or painting with lime without going further into the main serious problems, such as technical measures and strong discipline to keep the environment within and outside the department as clean as possible. Thus, there are departments where the directors of the enterprises themselves, as well as the ministries, must take measures without delay to improve the hygienic-sanitary conditions in the work environment and outside it; these departments include the fish meal department and the slag wool department in Vlore, the boot department in the rubber industrial enterprise in Durres, or the cotton ginning plant in Rrogozhine, the copper-zinc department in Tirana, and so forth.

The ministries, and especially the Ministry of Industry and Mines, which have been charged with concrete duties to make penetrating observations and studies on the protection of the environment from production processes in industry and on ways to cleanse it from various industrial waste products must help all industrial enterprises in the country with methodical and scientific instructions, especially those enterprise which are not fulfilling this duty properly. The organs of the State Health Inspectorate in work centers and in districts have great duties as organs of inspection not to allow violations of the rules which prevent the pollution of the environment at any time.

The 7th AWP Congress established important tasks to protect the environment. Implementing these duties requires a greater mobilization by state and economic organs and social organizations. Therefore it is the duty of everyone to devote more attention to protecting the environment everywhere from pollution to keep our country always clean and beautiful.

CSO: 5000

MEZICA SMELTER TO CEASE AIR POLLUTION SHORTLY

Ljubljana DELO in Slovenian 31 Mar 77 p 3

[Text] Ljubljana, 30 Mar 77--Today a representative of the Mezica lead mine and smelting plant gave assurances to members of the republic environmental protection activity that Mezica Valley, which for decades has been steadily destroyed by lead and sulfur dioxide and in recent time apparently also by chlorine, will soon be saved from all this misery. Plans providing 33.8 million dinars for coping with pollution have already been prepared. Credits in the amounts of 13 million and 8 million have been approved by the Bank of Ljubljana and the Maribor Insurance, respectively.

It is evident that these are no longer mere promises but that the plans for constructing the cleaning equipment that would prevent further poisoning of people, animals, and plants with minute particles of lead and sulfur dioxide are about to be implemented.

First the Particulates

Eight thousand people live in an area where the atmosphere and water are so polluted that they constitute a serious danger to life. Because of deposit of lead particulates it has been recommended that people should not eat lettuce and other produce grown in this area.

For the start the experts decided to tackle the lead particulate problem. By the fall of this year a special filter will be installed in the lead mine and smelting plant which will retain lead particulates. The particulates trapped in the filter will be by a special process fused into tiny balls so that no particulates will get into the atmosphere at the removal of the collected lead from the filter.

The expensive investment in environmental protection of Mezica Valley is more than justified because environmental pollution in this valley not only threatens but is already actually destroying life.

## One Hundred Times Greater Concentration

Lead belongs to the group of those heavy metals that are most harmful to man's health. All the ramifications and consequences of poisoning with heavy metals are not yet fully known and researched. For lead, however, it is known that it tends to aggregate primarily in the soft tissues of the human body and that it is very difficult for the organism to get rid of it. The brain is one of these soft tissues. Even more dangerous is the fact that lead causes rupture of the chromosomes and thus affect the heredity. Ruptured chromosomes were found in the inhabitants of Mezica Valley, but it is impossible to predict what consequences will result because of this in the future generations. For the animals that have much shorter lifetime the consequences are frequently disastrous. It is known that some animal species are no longer present in Mezica Valley.

Because lead belongs to the group of extremely dangerous metals standards have been established prescribing the maximal tolerable amounts of lead in water, food, soil, and the human organism.

In nature, where there are no artificial sources of pollution, the air contains 0.0005 microgram of lead per cubic meter, water contains 0.5 microgram per liter. The upper limit of lead tolerance in food is 0.01 parts per million. A daily ration of food for a person of average weight (70 kilograms) may contain not more than 20.5 micrograms of lead. The tolerance of lead deposited in an average person weighing 70 kilograms is 2 milligrams while the tolerance in human blood is 0.00025 parts of lead per million.

The data from the Mezica Valley, however, reveals a picture of a situation that is far from normal. Thus, for example, water in the Meza River and its affluents above Zerjav where the smelting plant is located contain 0.005 milligram of lead per liter. In Zerjav proper where the effluent is discharged the measurements showed a concentration of 685.12 milligram in a liter of water. Because of its high specific weight lead readily sinks to the bottom so that water becomes clean again within a relatively short time. However, at the point where the Meza River joins the Drava River the concentration of lead was still found to be 100 times higher than in unpolluted waters. Similar is the situation with the soil and food.

No less concern is caused by pollution with sulfur dioxide. The Mezica lead mines and smelting plant exude at least 17.6 tons of sulfur dioxide daily but at times quantities as high as 22.8 tons were registered. Because of atmospheric inversions in Mezica Valley the polluted air instead of rising tends to sink to the valley floor thereby causing enormous damage to the flora and fauna. The pollution control program to be implemented within the next 2 years also provides for prevention of these noxious sulfur dioxide emissions.

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CSO: 5000

## YUGOSLAVIA

### DIFFICULTIES CONTINUE IN KEEPING THE ADRIATIC CLEAN

Koper PRIMORSKE NOVICE in Slovenian 18 Mar 77 p 1

[Text] The 1974 law on bodies of waters places special emphasis on protection of the sea and waters. The law established a series of obligations but the service for the protection of the littoral sea organized within the water resources management enterprise Hidro Koper only recently received the necessary equipment to combat pollution. The struggle for legislation, appropriations, and finally for the equipment is over. Now it is necessary to organize an efficient service along the entire Yugoslav Adriatic coast and seek suitable systematic solutions.

It is a fact that neither the service in Rijeka which has been in operation for some time and which is apart from the service in Koper the only one of this kind in Yugoslavia, nor the new branch of the service for protection of the littoral sea have been able to cope with pollution on a large scale. The beginning, however, is promising and encouraging.

#### S.O.S. for the Sea

The 37 kilometers of the Slovenian coast recently found a defender who will protect it from the ever more frequent oil spills at sea. These are fast becoming the increasingly more unpleasant symbols of the rapid industrial development of the littoral and at the same time a portent of destruction of our natural environment by our own actions. The Swedish firm SOS (Scandinavian Oil Service) delivered, albeit belatedly, a boat for removal of oil from the sea, the so-called oilinator with the necessary equipment. The boat made by a firm with such symbolic name will help keeping the coastal sea clean in addition to other uses to which it can be put because of its design. It can be converted to a work platform or a small ferry and its equipment for combatting oil spills can also be used on the road. The latter application is particularly important because we are now in process of setting up three centers for combating pollution on land which will operate in Maribor, Ljubljana, and Koper.

## A Demonstration--Without Oil for the Present

The oil remover, if that is what it should be called, is 7.5 meters long, 3 meters wide, its hull sinks 20 to 40 centimeters deep, the maximum loading is 3 tons. It is powered by a 75-horsepower engine which provides the necessary speed and maneuverability. The boat can develop a maximum speed of 20 knots and cruises fully loaded at 110 knots [as published--probably meant to read 11 knots]. It is equipped with apparatus which includes an oil diffuser, 300 meters of screen, and, of course, a conveyor belt that picks up the oil from the sea. All this cost the regional water resources management community and the republic association of communities 1.34 million dinars of which the boat alone cost 660,000 dinars.

How does the oil remover work? On receiving the invitation to observe the boat in operation from the deck of a fast "M" boat of the maritime militia we were told that the crew was not yet fully proficient in operating the remover. However, the three man crew, one of whom was an instructor from Sweden, seemed to handle the equipment rather adroitly. This was, of course, on calm sea with simulated oil--because there was no money for the real thing--but the demonstration was nevertheless quite convincing.

We departed from the port and stopped in a place where an oil slick was supposedly sighted. The remover readily circled the oil slick and two crewmen began to lower into the sea an orange colored screen consisting of two meter long pieces filled with plastic balls connected under water with a chain. The present screen is 300 meters long but it is planned to acquire another 300 meters of it.

The boat "surrounded" the oil slick and closed the circle. Then the conveyor belt was lowered from the bow which when set in motion began to scoop up the oil while the circle continued to contract. The oil adhering to the conveyor belt was carried to the other end where it was dumped in a special tank with capacity of 2,000 liters. The cleaning operation was soon completed since the boat can scoop up from 3 to 15 cubic meters of oil per hour.

### Who Will Be the Detective?

The responsibility for keeping the sea free from pollution is shared by the regional water resources management community, a self-management interest community to which belong all local communities and basic organizations of the region. The community maintains the equipment used by Hidro Koper and its service for protection of the littoral sea. However, the law has a loophole which disturbs the Hidro. What is actually the matter?

Article 50 of the water resources code requires all persons to report pollution and provides that the expense of the cleaning operation be borne by the polluter. If the polluter is not known the expenses are borne by the water resources management community. However, the resources available to the community are limited and may not be adequate if pollution is extensive.

Hidro is making it clear that it will not be in position to extend credit for extensive cleaning operations and points out that a solution for handling such unusual cases will have to be found. Accordingly, the federation of water resources management communities recommends that a self-managing agreement which would secure funds be concluded.

For efficient control of oil it is first of all necessary to find the source of pollution. It is a fact that for the majority of pollutions in our country the source remains unknown. Clearly, now that the coast has acquired the cleaning equipment it will be necessary to organize an effective surveillance of the polluting sources. The question is who will be the policeman? In all likelihood Hidro will not be in position to organize a detective service nor is this in the line of its work. This will require cooperation of the coast surveillance, the Port of Koper, maritime militia, and the Port Authority. It also will be necessary to find ways of cooperating with the neighbors in the Gulf of Trst and the sea protection service in Rijeka.

#### Experiences at Rijeka

The Yugoslav Adriatic coast has so far had only one protector, namely, the service for the environmental protection of the sea at Rijeka which possesses a somewhat larger boat and considerably different equipment. There are different kinds of pollution which require different clean-up methods. The service at Rijeka has been operating the boat for two years in which time it carried out a series of cleaning operations. Professional engineer Ilija Dorcic, who is in charge of the service, personally conducted 300 oil slick removals the source of which was established and the responsible party required to pay for their work. This is very important because there are many more oil spills for which the sources are unknown. There is no need to add, of course, that it does not matter much where does the oil come from, because its effects are always equally damaging.

Professional engineer Dorcic pointed out that our system of surveillance and detection of sources of pollution is still very inadequate thus causing the problem of economics for the cleaning operations. At Rijeka discussions on how to organize the funding have been conducted for 2 years but the matter is progressing rather slowly because of the time consuming procedures involving 36 working organizations. It is clear that there is still a great deal of oil left in the sea that does not get removed and which is no less harmful. At present only one agreement has been concluded--a contract with the Rijeka refinery which is the only dependable and steady source of income for the service.

There really should be no question about availability of funds for environmental protection of the sea which is of priceless value not only to the population of the littoral but to the entire country. Unfortunately, people are not yet fully aware of this fact. Protection of the sea must become the concern of the entire system so that this natural resource may be saved.

## Pollution in Rovinj--3.5 Billion Dinars' Damage

Rijeka can already share some of its experience, the Koper service has yet to acquire its own. Elsewhere on the Adriatic coast, however, environmental protection of the sea is not being given enough consideration. Environmental protection can be effective only when every kilometer of the coast is included in an efficiently organized program which is at present still lacking.

This became clearly apparent early in the year when an oil slick appeared at Rovinj, which threatened to ruin this and perhaps next year's tourist season. If oil were spread on the beaches the resulting damage would cause a veritable disaster. According to estimates our economy would be robbed of 3.5 billion dinars--new dinars, to be sure.

For the present we are unable to combat pollution on such scale and will not be for some time. Realistically viewed the danger still exists and will some day reappear. We should not, however, think that no defense is available. On the contrary, equipment for this purpose is available and we should acquire it as soon as possible. The price in comparison with potential consequences of catastrophic pollution of the sea and the beaches is actually ridiculously low.

## The British Procedure

Ilija Dorcic is fully aware of the great danger that threatens in the wake of increasing oil transport traffic in the Adriatic. The unusual coexistence of tourism and expanded oil operation on one of the world's most scenic coasts is fraught with increasingly greater risk from day to day. We have not yet done everything necessary to reduce this risk. The leader of the Rijeka service suggests that a system modeled along that in use in Great Britain be introduced. The British system proved very effective despite a considerably larger area which the British must protect. With some modifications allowing, of course, for the difference between the British and Yugoslav situations a similar system could be profitably adopted here.

In Yugoslavia 95 percent of the total expenses that must be paid by the polluter represent the expense of the cleaning operation, other items such as port authority fees, damages to resorts and other organizations, and even fines represent only token payments. The results are commensurate with this: only in very few instances we are successful in discovering the source of pollution and most of the culprits remain unknown.

In Britain the situation is reversed, the fines which can be as high as 50,000 pounds, which is more than 1.5 million dinars, constitute 95 percent of all expenses, the rest of expenses being relatively minor. Part of the proceeds from the fines is allocated for maintaining the efficiency of operation but most of it goes in the fund for unknown polluters. There are not many of the latter, however, the authorities claim that 98 percent of all pollution is traced to its source.

If a system based on essentially the same principle were introduced in Yugoslavia, we would within 2 years be able to remove without difficulty the oil slick at Rovinj.

#### First Step

Viljem Klemenc, leader of the service for environmental protection of the sea says: "We needed a law and we got it, we needed money and we got it, we needed a boat and we got it. Now it is for us to become organized so that we can operate efficiently."

It should be realized that the boat which the coast has acquired is of extraordinary importance and represents an enormous step forward in our approach to the protection of the sea but at the same time it is only the first step on the path toward a complete system of environmental protection of the sea. An essential part of this system constitutes the subsystem of surveillance and timely detection of pollution.

In view of the fact that equipment is already available the next step must lead in this direction so that full value of the newly acquired tool may be realized.

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MONOXIDE INTENSIFIES POLLUTION IN SAO PAULO

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 4 Mar 77 p 38

[Text] The capital of Sao Paulo is the daily recipient of 2,891 tons of carbon monoxide, 181 tons of nitrogen oxide, 60 tons of sulfur oxide, 353 tons of hydrocarbon and 22 tons of particle material, all emitted by a total of 1,139,000 vehicles circulating in the city. Speaking of carbon monoxide only, for example, whereas legislation in the United States calls for an emission limitation of 9 grams per 1,000 meters traveled, Sao Paulo has already reached a level of 48 grams in the central area.

Information supplied by CETESB, Environmental Technology and Sanitation Company, points out the "seriousness of the problem of air pollution in the city, especially during the winter months when thermal inversions occur frequently," according to the experts.

In addition to carbon monoxide, there is another highly poisonous pollutant in the form of lead compounds coming from the tetraethylene lead added to gasoline to increase its detonation resistance. In this instance also, concentrations measured in Sao Paulo are reaching alarming proportions.

Yesterday, for example, the second day of the month in which the temperature was relatively low, CETESB recorded a level of 15.5 parts per million of carbon monoxide in the central area, whereas 9 parts per million is considered a maximum satisfactory level.

Within the parameters determined by that company, Sao Paulo was at an "alert" level yesterday, and the outlook for today continues to be "somewhat unfavorable," despite our being in the middle of summer.

In CETESB's opinion, these affirmations justify the government's concern relative to the prognostication for next winter. The firm's experts, such as Director Nelson Nefussi, assert that preventive measures must be taken to avoid more serious cases of illness and discomfort on the part of the Sao Paulo residents.

From a practical standpoint, in addition to the possibility that the city's central area will have to be paralyzed for a period of 4 days during the

winter, Secretary Francisco de Barros announced yesterday that CETESB recommends the following indirect measures to decrease the pollution caused by combustion engines:

a) orderly reduction of traffic; b) improvement in traffic flow; c) improvement in collective transportation; d) decentralization of the central area's activities; e) construction of airports away from the city; and f) removal of shopping centers from the greater central area.

Those responsible for environmental control in Sao Paulo state that in order to achieve a reduction in the concentration of pollutants emitted by "mobile sources"--basically automotive vehicles--governmental control must be supplemented by the understanding and collaboration of the motorists and people.

Among "collaborative" measures, they cite constant regulation of motors, keeping the gasoline tank full in order to reduce evaporation, and reducing automobile use to a minimum.

Simultaneously with alerting the people concerning the pollution levels experienced in Sao Paulo and intervening with restrictive measures to avoid still greater problems, the Secretariat of Public Works and Environment also decided to restrain vehicle use--private and fleet automobiles--in their normal sphere of activity. Francisco de Barros announced yesterday, for example, that next winter, during the months of June, July and August, the secretariat will close its Riachuelo Street parking lot and provide diesel minibuses for the transportation of employees at all levels, even conveying technicians from one sector of the organization to another.

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BRAZIL

MINAS STUDIES LEGAL METHODS FOR CONTROLLING POLLUTION

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 3 Mar 77 p 29

Text Belo Horizonte--Even though it had recognized at the beginning of this decade that the state was facing serious problems of environmental pollution, the Minas Government only now is considering the adoption of initial legal control measures. Governor Aureliano Chaves ordered his advisory staff yesterday to examine urgently the suggestions proposed by a work group of the Secretariat of Science and Technology.

The principal suggestion is the establishment of a State Council for Environmental Policy with the objective of defining the level of pollution control and empowered to act at legal, technical and control levels. Other suggestions concerned incentives for the use of equipment to combat pollution and an a priori analysis of the environmental impact of any project that might contribute to the state's welfare.

According to the Secretariat of Science and Technology, the government's concern with environmental conditions in Minas Gerais appeared for the first time with the establishment of the Executive Group for Science and Technology in April 1975. At the same time, CETEC, Minas Gerais' Technological Center, established an environmental engineering sector to develop and provide services in that domain.

It was only at the beginning of this year, however, with the establishment of the Secretariat of Science and Technology, that legal measures for pollution control began to be discussed officially in an articulate manner resulting in the formation of the work group whose suggestions are now being examined.

The work group suggests the establishment of the State Council for Environmental Policy responsible for creating and consolidating environmental legislation and empowered to enforce compliance with that legislation or impose sanctions in the event of noncompliance. Norms and control procedures will be established directly by the council which will be assisted in the technical, inspection and test activities by CETEC and other qualified groups.

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BRAZIL

BRIEFS

AREA EXPROPRIATED FOR RESERVE--The president of the republic signed a decree authorizing the Ministry of Interior to expropriate 370 hectares of land in the vicinity of the municipality of Esmeralda in Rio Grande do Sul for establishing the country's first ecological reserve, according to information given yesterday by Paulo Nogueira Neto, special secretary of environment. At the present time, SEMA [Special Secretariat for the Environment] experts are studying the establishment of eight additional reserves. Despite its being limited to 370 hectares, Nogueira Neto considered this ecological reserve one of the most valuable areas in that it is the last stronghold of pines in southern Brazil with about 5,000 trees. The reserve will be given the Guarani name "Aracuri," which means "Pine Forest of the Parrots," since various species of parrots faced with extinction are found in that region. The expropriation of the land for this reserve will cost about 8 million cruzeiros to be paid by funds from FINEPE [Corporation for Financing Studies and Projects], already approved by the Presidency of the Republic. According to Nogueira Neto, the establishment of the Aracuri reserve will save at least 5,000 pine trees, while in the neighboring areas the pine forests are being razed to prevent the sawmills from closing due to lack of wood. "If we do not preserve certain areas now, it will be too late. At the present time, there is still lack of understanding; but I believe that, with further education, the people will attach importance to ecological reserves," Nogueira Neto said. [Text] [Sao Paulo O ESTADO DE SAO PAULO in Portuguese 15 Mar 77 p 18] 8568

CSO: 5000

CAPITALISM RUINS THE ENVIRONMENT

Havana GRANMA in Spanish 24 Feb 77 p 2

[Article by Juana Berges]

[Text] Environmental protection is now the focus of attention of many international celebrities and organizations. However, many of the measures and agreements adopted are constantly being violated by the capitalist countries.

According to the bourgeois scientists who defend the large monopolies, the present ecological problems are the direct result of scientific and technological progress. There is nothing further from the truth.

The task, in reality, is to harmonize the advances of science and technology with environmental protection in a planned way in the interest of all society. This would impede pollution of the earth, the air and the water which in many places has reached very dangerous levels because of the criminal and irresponsible practices of imperialism which does not consider the fate of humanity.

Friedrich Engels noted in "The Situation of the Working Class in England" that there is a close interrelationship between industrial development and the condition of the environment.

Since its rise, capitalism has been characterized by a desire for profits by the owners of the means of production.

All of capitalism's progress has been conditioned by this law of exploitation which led men to rob their own brothers.

The concentration of capital, inherent to free competition, led to large monopolies that extended their tentacles outside national boundaries in order to obtain larger profits.

Concerned only with increasing their profit rate, they have always ignored the effects that their plundering policy has had on the

environment and natural resources inside and outside their territories. Unplanned production, waste and the lack of ability of the capitalist system destroy nature in an alarming way.

According to data supplied by the United Nations, some 10 million tons of oil and more than 5,000 tons of mercury are dumped in the oceans every year. More than 500 million people have become ill with typhus, cholera, dysentery and other diseases because of consumption of water polluted by the residue of capitalist industries. The existence of thousands of animal and plant species that in one way or another make use of those waters is also threatened.

In France, for example, there were more than 50 species of fish in the lower Seine at the beginning of the century. Today there are only a few sick eels. It is estimated that the poisons in French rivers could fill 10,000 600-ton trains.

The Lake of Zurich in Switzerland is literally dead due to pollution.

Radiation, a growing threat to the human race, is handled with total irresponsibility by the large North American consortia. It is estimated that radioactive waste dumped in the Columbia River has contaminated plankton up to 2,000 times the tolerable level and fish up to 15,000 times the acceptable level.

Another report on air pollution stated that General Motors which is responsible for 35 percent of the air pollution in the United States spends only .06 percent of its profits for environmental protection measures.

The businessmen, to "economize," hinder the construction of purifiers and filters. The antipollution commissions established in North America do little since their members are representatives of the corporations that are in turn the principal polluters. The capitalist system is also responsible for the devastation of forests in many regions of the world. This has caused land erosion and the extinction of hundreds of animal species.

In the United States itself forests are cleared in such an irresponsible manner that Fairfield Osborn noted in 1948: "The history of our country in the last century with respect to the exploitation of forests, pastures, wild animals and springs is the most violent and destructive that has ever been written. The speed of events is unparalleled."

In the underdeveloped regions, the large monopolies--which steal natural resources--also destroy the environment. In Brazil about three-fourths of the "occupied land" is unusable for cultivation because of excessive exploitation.

In spite of the low level of industrialization in Latin America, the problem of pollution has become serious in cities like Buenos Aires, Sao Paulo and Santiago, Chile (among others) where industries with a high index of pollution are relocated from imperialist cities.

There are attempts to convert Puerto Rico into a gigantic port to receive oil with absolute disregard for the consequences that this could have for the flora and fauna of that small country.

Meanwhile, the socialist nations with planned economies and a true collective conscience about the need to protect the environment work hard for the well-being of man and the preservation of the environment.

In 1969, according to data from UNESCO, the Soviet Union had more than 63,000 square kilometers of its territory set aside for national parks and reserves--that is, an area equal to Belgium and the Netherlands together.

In the USSR transportation is electrified to eliminate motor combustion exhaust from vehicles in the cities. Large businesses are relocated to areas far from the urban centers. The Soviets have many territorial production complexes which combine nature, population distribution and the placement of the industries in a single plan.

All the socialist countries pass many measures and invest large resources in making human life safer and more pleasant.

In an analysis of present ecological problems, Boris Makliarski from the Soviet Academy of Sciences indicated that long ago production, deeply social in nature, turned into private appropriation of the product of social work--the basis of the free enterprise system. He said that it is very easy to explain the sad fate of the biosphere since capitalist production seeks only maximum profit for a handful of owners of the means of production. He concluded that this conflict that occurs in capitalism is one of the most important manifestations of the "rebellion of the modern productive forces against the present production system and the present ownership system that are basic to the existence of the bourgeoisie and their domination" as Karl Marx and Friedrich Engels, the founders of scientific socialism, explained.

Selfishness, the desire for power, irrationality and the anarchy inherent in capitalism convert that anachronistic social system into an assassin of the environment.

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ENVIRONMENTAL PROTECTION COMMITTEE FORMED

Havana GRANMA in Spanish 3 Mar 77 p 3

[Article by Jose A. de la Osa]

[Text] The CNPMACRN [National Environmental Protection and Natural Resource Conservation Committee] under the State Committee for Science and Technology was officially formed yesterday in a meeting held at the Palace of the Revolution. Belarmino Castilla Mas, a member of the Central Committee and the Council of State and deputy chairman of the Council of Ministers, presided over the meeting which was attended by representatives of 23 mass organizations.

In compliance with one of the agreements of the First Party Congress, this committee was created by Law 1323 of 1976 which stipulated that it will be in charge of dictating the scientific and technological norms of orientation, organization and supervision in the fields of environmental protection and the conservation and rational use of natural resources.

The members of the Executive Council of the committee are: Dr Carlos Martinez, chairman; Dr Helenio Ferrer, deputy chairman; engineer Hector Sague, scientific secretary; and Dr Pedro Canas Abril, chairman of the Scientific Council.

The following organizations are represented in the Scientific Council of the committee: the Cuban Academy of Sciences; the National Institute for Use of Forests; the National Institute of Tourism; the National Physical Planning Institute; the National Institute for Sports, Physical Education and Recreation; the Ministry of Agriculture; the Ministry of Higher Education; the Ministry of Interior; the Ministry of Public Health; the Ministry of Chemical Industry; the Ministry of the Fish Industry; the Ministry of Education; the Ministry of the Revolutionary Armed Forces; the Ministry of the Sugar Industry; the Ministry of Mines and Geology; the Ministry of Construction; the Ministry of Transportation; the National Association of Small Farmers; the Central Organization of Cuban Workers; and the Committees for the Defense of the Revolution.

The CNPMACRN is divided into subcommittees on protection of the atmosphere, the water, the land, the subsoil, the flora, land fauna, marine fauna, tourist resources, human settlements and poisonous waste materials.

Some of the fundamental tasks that this committee will undertake immediately are the elaboration of the conceptual bases of the scientific and technological policy for environmental protection and the conservation of natural resources, analysis of the problems of water pollution and pollution of the agricultural areas, studies for the establishment of a medium and long-term program for environmental protection and the conservation of natural resources and a study on the most urgent aspects of sand conservation on the beaches.

#### Speech by Belarmino Castilla

In his speech Belarmino Castilla pointed out the importance of the creation of CNPMACRN which will unite the isolated efforts made in our country in the fight against progressive environmental pollution which is a problem for all people today.

"It is evident," he said, "that if concrete measures are not taken in this area, it would be impossible to continue improving the high health standards attained. They are closely tied not only to medical work but to hygienic and sanitation advances which are factors in preventive medicine."

He reported that the committee has proposed concrete objectives for the present year. "We have the support of the party and the government."

Castilla Mas indicated that we must try to resolve the conflict between developmental problems and those of environmental protection on the basis of scientific and technological studies and organizational measures. "This is the work that the committee which we have officially created today has to do," he stated.

The meeting was also presided over by: Professor Zoilo Marinello, chairman of the State Committee for Science and Technology and a member of the Central Committee; Dr Wilfredo Torres, president of the Cuban Academy of Sciences; and Dr Carlos Martinez, president of the Executive Council of the CNPMACRN. Dr Martinez asked for the personal cooperation of those present and institutional collaboration from the organizations that they represent in order to reach the goals assigned.

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CSO: 5000

MORE ON BOILING WATER BEFORE USE

Kampala VOICE OF UGANDA in English 14 Feb 77 p 4

[Text]

I would be very grateful if you could allow me space in your esteemed paper to throw more light on the article by Mr Asuman Nakendo. The article referred to here appeared in your paper of Monday 7/2/77 on page 3.

The headline of that article "Boil your tap water before use" and the first sentence of the first paragraph were very sweeping and are likely to confuse our water consumers.

National Water and Sewerage Corporation advises its customers in Kampala, Entebbe and Jinja areas, where it operates, to boil water only when there is a break down of the chlorinating plants in its water treatment works.

Whenever there is such a break down, the corporation advises its customers, in the area affected, through mass media to boil water before use until it issues another instruction to the contrary.

It is true that the Corporation does not boil water at any stage of its water treatment because it is not necessary. The full physical and chemical treatments the Corporation gives the water which goes through its treatment works are enough to kill all the bacteria present therein.

The temporary storage in the clear water well provides a contact period between the chlorine and water to kill off the remaining micro-organisms which may have escaped at the chlorinating plant before water leaves the water works.

The water which leaves the Corporation water works contains a residual chlorine of 0.2-0.4 milligrams per litre (4 parts per million). The residual chlorine helps to kill

any micro-organisms arising from re-contamination of water on its way to the consumer.

The water which is supplied by the Corporation has to fulfil the World Health Organisation's standards for safe drinking (potable) water. Henceforth, the Corporation has a laboratory where rigorous physical, bacteriological and chemical quality examinations of its water are carried out to make sure that the water conforms to those standards.

Besides, there is the department of government Chief Chemist, in the Ministry of Internal Affairs which carries out frequent independent monitoring of the water quality that our Corporation supplies to its consumers.

So, unless our consumers are advised by the Corporation they do not need to boil their tap water before use.

**ENG. F. P. OPENTYO**  
 ag. Managing Director  
 National Water and  
 Sewerage Corporation

**EDITOR'S NOTE: Does the chlorinating plant always give an advance warning before break-down so that you relay the same to the consumers?**

## MEASURES TO PROTECT THE AIR BASIN

Moscow EKONOMICHESKAYA GAZETA in Russian No 9, Feb 77 p 14

[Article by I. Reshidov, director, State Scientific Research Institute for Gas Purification in Industry and Sanitation, candidate of technical sciences]

[Text] Protection of the air basin against contamination by harmful substances is only a part of a large complex of measures being carried out in our country to protect the environment. It envisages the disposition of new production, improvement of technological processes and equipping them with special highly effective installations.

Especially great importance in this respect is being acquired by the introduction of zero-wastes or low-wastes technology at individual enterprises. A good example is the production of technical carbon, when the gases containing carbon monoxide are burned in special boiler installations after being purified by dust collectors. This process has been introduced at all modern technical carbon enterprises of the Ministry of Petrochemical Industry USSR producing activated carbon.

No small effect from the point of view of the ecology and economy is given by the trapping of entrained ashes of thermal electric power plants. They are used at a number of enterprises of Irkutsk, Angarsk, Novokuznetsk and other cities for the production of cinder concrete, from which large wall panels are made for housing and industrial construction. In that case the weight of the walls is reduced by a factor of 4 or 5 in comparison with brick walls.

There are great possibilities of reducing harmful effects on the air basin in other branches of industry also.

### The Direction of the Search

The leading organization in the country in the development of measures connected with preservation of the air basin and also the recovery of valuable products from industrial wastes is the Scientific Research Institute for Gas Purification in Industry and Sanitation (NIIOGAZ) of the Ministry of Chemical and Petroleum Machine-Building. Similar work is being done

simultaneously by a large number of branches in scientific research, planning and design and other organizations. In connection with that, questions of interbranch coordination of that work are acquiring great importance.

On the basis of materials obtained from many ministries and departments our institute has analyzed and systematized scientific and technological problems of gas purification. And for the branches of industry, the enterprises of which are the main sources of contamination of the air basin, NIIOGAZ jointly with other branch scientific research institutes has determined the main directions of investigations of problems of gas purification and dust collection, and has also designated those responsible for the solution of named problems.

Those materials, agreed upon with the corresponding ministries, served as the basis for the compilation of drafts of annual and five-year branch coordination plans of work.

In addition, to assure the effective interaction of organizations and enterprises of branches of industry in the carrying out of measures to reduce harmful discharges into the atmosphere, determine the volumes of scientific research and experimental design work, the periods of its accomplishment and those who were to perform it, orders were issued by the Ministry of Chemical and Petroleum Machine-Building (Minkhimmash) USSR jointly with the Ministry of Power and Electrification (Minenergo) USSR, the Ministry of Chemical Industry (Minkhimprom) USSR, the Ministry of Nonferrous Metallurgy (Mintsvetmet) USSR, the Ministry of Ferrous Metallurgy (Minchermet) USSR and the Ministry of Construction Materials Industry (Minstroyaterialov) USSR.

Moreover, the analysis of the coordination plans made by us showed that some work of the same kind is done in parallel by several organizations in different branches of industry. To avoid duplication and establish a definite effective interaction of the various ministries and departments, NIIOGAZ holds coordination conferences on problems having an interbranch character.

Of course, NIIOGAZ does all its work on interbranch coordination through the leading branch organizations -- the scientific research and planning institutes. By now their number has risen to 20.

It should be noted that in a whole series of branches of industry, particularly with machine-building and construction profiles, up to now leading organizations have not been designated, which of course cannot contribute to a proper solution of problems of gas purification and dust collection in those branches.

In recent years our institute, and also the scientific research organizations of other branches, have developed, designed and introduced modern gas purification equipment to the most important objects of the national economy. For example, to trap fogs of sulfuric, phosphoric and other acids NIIOGAZ has developed fiber filters and spray traps. They are already in operation at a number of enterprises. Such filters have proven to be very effective

for purification of the vented exhausts of galvanic chrome-plating baths of machine-building plants. However, the wide spread of such equipment is delayed because Minkhimprom does not produce polypropylene and fluoride fibers.

There are many examples of creative collaboration of our institute with the branch scientific research institutes.

Still, it should be acknowledged that, although the institute has done definite work on the interbranch coordination of scientific research in the area of gas purification, we have not succeeded in completely eliminating duplication of individual developments worked out by organizations of different ministries and departments. Consequently, our institute has a great deal to do to have interbranch coordination become more flexible and effective.

#### Only Through Collaboration

The introduction of new and modernization of obsolete equipment is not proceeding, unfortunately, as rapidly as is necessary. The main difficulty is that large and complex equipment is made mainly at the single specialized enterprise of Minkhimash -- the Semibratovo Experimental Gas Purification Equipment Plant. In the last 4 years its output has doubled. The ministry is constructing new plants in the cities of Troitsk (Chelyabinskaya Oblast) and Kostroma. However, the introduction of those plants has been unjustifiably delayed through the fault of the builders.

It seems it would be advisable to manufacture some gas purifiers and dust collectors at enterprises of other ministries specially designated for that purpose. For example, the production of grain filters and hydrodynamic dust collectors could be entrusted to one of the enterprises of Ministroy Materialov USSR. Incidentally, that equipment was developed by the branch institute NIPIOTSTROY [Scientific Research, Planning and Design Institute].

The Ministry of Tractor and Agricultural Machine Building could organize at one of its plants the production of wet spark quenchers, developed in the system of the ministry, for purification of waste gases of foundry cupolas. In our view the production of filter cloths for bag filters, which assure high efficiency of gas purification, must be increased. They have become widespread in nonferrous metallurgy and a number of other branches. It is necessary for "Soyuzkhimvolokno" (All-Union Chemical Fiber) and "Soyuzstekloplastik" (All-Union Glass-reinforced Plastic) associations of Minkhimprom to accelerate scientific investigations in the development and improvement of high-temperature filter materials, and for Minlegprom (Ministry of Light Industry) USSR to organize their industrial production.

And lastly, it is very desirable to increase the output of large-capacity forced-draft equipment. Insufficient production of it at enterprises of the Ministry of Power Machine Building is delaying the introduction of large gas purification and dust collecting equipment.

Solution of the above-named problems will contribute to more successful fulfillment of the tasks set by the 25th CPSU Congress in the preservation of the country's environment.

MOSCOW CONFERENCE: MAN AND THE BIOSPHERE

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 15 Mar 77 p 1

[Article by V. Drozdov]

[Text] A conference of national committees of socialist countries for the problem "Man and the Biosphere" is being held in Moscow from 14 to 18 March. It includes 14 major projects relating to both separate regions and the entire planet.

The scientific collectives of the Academy of Sciences USSR and VUZ of the country are participating in the solution of the complex problem "Man and the Environment," developed by the Gosplan USSR, the Council of Ministers RSFSR and the Ministry of Higher and Secondary Specialized Education RSFSR. Among them is the collective of the country's first department of the economics of nature use, created not long ago in the Moscow Institute of the National Economy imeni G. V. Plekhanov.

Our free-lance correspondent V. Drozdov asked a participant in that conference, department head docent P. M. Nesterov, to talk about some theoretical and practical problems of the new branch of science.

"Petr Mihaylovich, the word combination 'economics of nature use' has not appeared widely in ordinary speech. Although there has long been discussion of the subject itself, many opinions are expressed, and at times contradictions."

"Actually, the words 'economics of nature use' occur only in the scientific world, among specialists. But that is not the problem.

"Contamination of the biosphere is not a fatal law of nature, but a result of economic activity. Especially now, when the interrelations of man with nature are becoming more and more extensive, varied and complex. They are already determined not so much by a quantitative as by a qualitative characteristic. For example, what has the intrusion of chemistry into our lives meant. It has put in circulation products and materials which nature does not know and which were never produced before.

Economic activity can weaken the medium of habitation, but it is possible to enjoy the gifts of nature also in accordance with its natural laws. To do that, man must seek reasonable directions of nature use."

"What are those directions and what is the basis of them?"

"One of the most important ways is the creation of territorial industrial complexes without wastes, with utilization without consequences. That is, regions in which all wastes harmful to man or the animal or plant world will be processed and used. Each territorial industrial complex must have its own system of protection of the environment which takes into consideration distinctive features of the region. In our department the optimal economic-organizational, ecological-economic and technological-economic structures of such "pure" territorial industrial complexes will be studied.

"The realization of this idea brings success if the natural resources are used completely. Many examples can be cited in which a narrow departmental approach leads to great losses in the national economy. Sometimes, due to extreme zeal of land improvers the wind removes up to 10% of the upper layer of turf on dried swamps. The very fertile soil will perish. I also recall what is generally known: massive cutting of forests leads to the shallowing of rivers and changes the climate, and the building of hydroelectric power plants worsens the water regime, which interferes with navigation, the fish catch, etc.

"And here is an example of a different kind. Deserving of very good words is the activity of the 'Gazoochistka' of the Ministry of Chemical and Petroleum Machine-Building. Installations manufactured at enterprises of that administration, which eliminate the ejection of aggressive substances into the atmosphere, are already in operation at many plants and factories of the country. But the effect from investments in that extremely useful matter is still far from optimal. The trapped wastes are insignificantly processed; there is no cooperation in this question between the departments and enterprises. Therefore today wastes are nothing more than expenditures, but tomorrow, when they enter economic circulation, they will have to become one of the sources of the financing of measures in natural conservation.

"The spread of wasteless, smokeless production without drainage is connected with the creation of a single statewide system of protection of the environment. In it an important place is allocated to systems of protection of the environment of separate regions. Each territorial industrial complex must have its own special agency, its own "law-giver and inspector," who controls and coordinates the execution by all departments and enterprises of designated natural conservation measures matching the ecological and other distinctive features of the given region.

"Those distinctive features, obviously, must be taken into consideration already in the stage of developments of drafts of regional planning."

"It would be very difficult to overestimate the role of the planners and builders in rational use of nature, because, as is well known, any territorial

industrial complex starts with the plan, which is realized thanks to the efforts of the builders. It is gratifying that there already are examples of a complex approach to the planning and use of natural resources.

"Specialists of the 'Gidroproyekt' Institute imeni S. Ya. Zhuk recently developed the plan of a new hydroelectric power plant on the Angara -- the Boguchanskaya. In one of the stages in the planning, three alternatives of the section of hydro-station competed. Preference was given to the least advantageous from the point of view of power engineering but the most effective from positions of nature use. It makes it possible to not flood masses of the famous Angara pine and iron ore deposits and offer very good climatic conditions to the inhabitants of the future city of power engineers.

"The economics of nature use require the coordination of natural conservation actions in time. At times this is considered a second-grade matter, and then we obtain the reverse effect. Here is the unhappy story of what happened at the Severo-Donetskaya TETs. It was necessary there to simultaneously erect very efficient gas purification installations -- electrostatic and chemical purifiers. The former went successfully into operation first but the builders gave up the second object as hopeless. But they wasted time with it until the first installation went out of order. It was necessary to shut down the second as well, since it could not operate without the first. Of course, it was impossible to blame the builders in that case. But it appears that the time has arrived to create in this country specialized subdivisions for the introduction and operation of such complex objects.

"But it has to be noted that neither the voice of society nor even the strict directive measures and organizational innovations can force many managers of enterprises and departments to consider the natural conservation code sacred. Conditions must be created which would stimulate the economic incentive to preserve the biosphere of all branches of the national economy."

"Is it here that the economics of nature use must say a weighty word?"

"That is precisely the task which has been set for our institute and the department by the national economic plan for the present five-year period. I have already said that the departments have little interest now in natural conservation activity. The situation is not better at individual enterprises. From the position of the manager who pursues a transient effect, the introduction of wasteless technology is viewed as disadvantageous, since the expenditures to organize exceed the value of the additional production obtained from the wastes. Such a view cannot be considered correct, however, for only his own, departmental, pennies are considered in that case, and the total national economic effect is disregarded.

"Still nowhere do you see that measures to protect the environment have been linked with the technological and economic indicators of the main production. They are still considered an incidental second- or even third-grade process. This error results not only from lack of understanding of the problems of ecology but also from an absence of scientifically substantiated prices and

standards of payment for contamination from the profits of enterprises. The matter is reduced to the fact that some resources allocated by the state for protection of the environment are directed by the enterprises into the sphere of their own production. Therefore the economists -- the "nature-users" -- strive now to develop a mechanism of effect of the economy on improvement of natural conservation activity and to transfer it from the state budget into cost accounting.

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USSR

SYMPOSIUM ON CONTAMINATION OF AIR

Moscow UCHITEL'SKAYA GAZETA in Russian 15 Mar 77 p 1

[Article by the newspaper's correspondent in Leningrad]

[Text] Scientists from 20 countries of the world became participants in a symposium in Leningrad devoted to one of the important problems in preserving the environment -- meteorological aspects of contamination of the atmosphere. The meeting was organized at the initiative of the Soviet Union.

"The atmosphere does not know national boundaries," emphasized the well-known Soviet scientist, director of the Main Geophysical Observatory imeni A. I. Voyeykov, Professor Ye. P. Borisenkov, "and that is why the scientists of different countries must concern themselves about the purity of the atmosphere and study it together. Our symposium is a concrete example of the practical embodiment of the decisions of the 25th CPSU Congress in the area of natural conservation and the development of international scientific and technological collaboration."

Leningrad did not accidentally become the place where the meeting of geophysicists, meteorologists and designers. The Voyeykov observatory is the leading scientific institution of the Hydrometeorological Service USSR in the area of study of atmospheric processes. Its collective is widely known for its fruitful investigations. Practical problems in the preservation of the air basin are successfully solved in the city on the Neva.

The symposium will last 10 days. Urgent theoretical and technical questions will be discussed at it. The guests are visiting the laboratories and experimental areas of the Leningrad geophysicists.

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## BRIEFS

WATER PURIFICATION--Astrakhan. The first line of a complex of purification equipment, the "Moydodyr," of the Astrakhan administration of Glavneftesnab (Main Administration for the Transportation and Supply of Petroleum and Petroleum Products) has been received into operation. With the start of navigation this year ballast and bilge water will be received from tankers and other vessels. As a result the discharging of contaminated runoffs into the Volga and Caspian will be greatly reduced. The equipment, which includes many kilometers of pipeline and pressure pipes and also a 43-hectare evaporating pond, is run by the SMU-4 trust of "Volgogradneftegazstroy" and the PMK-33 trust of "Yuzhvodstroy." It has received a good rating from the State commission. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 16 Feb 77 p 2] 2174

WASTES REDUCED--Ufa. The Novoufimskiy petroleum refinery has started to construct an installation for the purification of liquified gases. After it has been put in operation the consumption of alkali, now used to purify the gases of sulfur, will be considerably reduced at the enterprise. A special catalyst will perform that operation in the new installation. The construction of a special-design technological purifier is only one item of a general plant plan of economic and social development in which much attention is given to preserving the environment. Systematic and purposeful work of the petroleum refiners has reduced wastes by a factor of 2 or 3 in recent years alone. [Text] [Moscow IZVESTIYA in Russian 15 Mar 77 p 1] 2174

PURE AIR SERVICE--Moscow. On Komsomol Square, Varshavskiy Road, in the region of Lyublino, at the Exhibition of Achievements of the National Economy of the USSR and at some other places in Moscow, small booths of a silvery metal have appeared. They are special posts for the observation and monitoring of the purity of the air. Each of them is equipped with sensors, air sampling devices and miniature weather stations. The posts are not everywhere. Where there are none, mobile laboratories on trucks go out on patrol on the streets of the city every day. The instrument readings and air sample analyses are transmitted promptly to the Central Height Hydrometeorological Observatory. In recent years about 100 enterprises which considerably contaminated the environment have been moved beyond the city limits. In Moscow a hundred public gardens and boulevards have been created, and trees and shrubs have been planted along streets. After the general plan for the development of Moscow has been accomplished there will be over 30 square meters of green plantings per inhabitant. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 6 Feb 77 p 4] 2174

THE RIVER HAS BECOME CLEAN--Alma-Ata. The sanitary inspectorate has sealed the closed valves on the industrial runoff overflow of the concentration plant of the Zolotushinskyye Ore Administration of the Ministry of Nonferrous Metallurgy Kazak SSR. This was done at the request of the enterprise itself, where a circulating water supply system has been introduced. Waste waters now do not contaminate the Aley River. [Text] [Moscow IZVESTIYA in Russian 20 Feb 77 p 2] 2174

PURIFIERS FOR AIR--Cheremkhovo, Irkutskaya Oblast. In Cheremkhovo, the center of the coal industry of Eastern Siberia, large purifiers have been put in operation. Their capacity is 22,000 cubic meters of industrial discharges per day. Two cities, Cheremkhovo and Svirsk, will use them at once. Due to the low temperature of the water, Siberian rivers have little capability of biological self-purification. Therefore the purifiers are of especially great importance in the preservation of the Angara basin. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 6 Feb 77 p 2] 2174

FOR AIR PURITY--L'vov. The L'vovskays Oblast Council of the Society of Natural Conservation has assumed supervision of questions of purity of the atmosphere in the regions of industrial enterprises. A special inspection competition was announced, during which it was verified how the enterprises were using purification equipment. The winner was the Sokal' Chemical Fibers Plant. At the enterprise the workers of the plant industrial sanitation laboratory carefully monitor the purity of the atmosphere, and the domestic and imported purification equipment is skilfully and effectively used. The contamination there never exceeds the allowable sanitary standards. The indicators also are good at the Rozdol "Sera" (Sulfur) Production Association, the L'vov Paint and Varnish Plant and the Drogobych Petroleum Refinery. Taking into consideration the importance of the problem, the oblast council decided to continue the inspection competition in 1977 as well. [Text] [Kiev PRAVDA UKRAINY in Russian 20 Feb 77 p 3] 2174

GAS-CONDENSATE POWERED BUSES--Tashkent. The first interurban trip, from Chirchik to Tashkent, has been completed by the bus "Icarus," with gas condensate in its tank instead of diesel fuel. The engine worked steadily at various loads. The "Icarus" did not leave smoke behind it. Another advantage is economy of resources. This novelty is a result of investigations conducted in the Tashkent Institute of Motor Vehicles and Roads. According to the procedure developed by the scientists a simple installation separates light hydrocarbon fractions from the condensate. After that it can be poured into the fuel tank of a diesel engine. The first such equipment was installed in the Chirchik bus and taxi pool. Still another installation will function near Tashkent. The Hungarian "Icarus" installations with which the Chirchik motor vehicle pool has been equipped have become the first buses in Central Asia transferred to the new fuel. [Text] [Baku VYSHKA in Russian 3 Feb 77 p 4] 2174

COMBATING NOISE--Leningrad. A three-day scientific and practical conference, at which problems of the struggle against noise by the methods of sound insulation and absorption were discussed, was held in the city on the Neva. Technical and engineering workers of enterprises and co-workers of planning and scientific research organizations of Leningrad heard reports on new materials and structures, on methods of planning, calculation and inspection, and also on experience in the application of sound absorbing and sound insulating parts in the construction of public, industrial and housing buildings. The leading specialists and scientists from Moscow, Gor'kiy and Chelyabinsk participated in the work of the conference. [Text] [Moscow STROITEL'NAYA GAZETA in Russian 2 Mar 77 p 2] 2174

WATER PURIFICATION SYSTEMS--Bryansk. New purifiers have been put in operation in Chukovka, Surazh, Unecha and other cities and villages of Bryanskaya Oblast. They are capable of returning to the rivers over 40,000 cubic meters of purified industrial and household waste waters. Besides the purification buildings, the construction of many other objects for water conservation has been developed in the Bryansk area. At Karachev a station for the neutralization of contaminated waters has been started up, at the Dyat'kovo Crystal Plant a large water intake, and at the Bryansk Cement Plant a circulating water supply system, one which has permitted greatly reducing the water consumption. Much has been done to protect the environment by the members of the All-Russian Society for Natural Conservation, who have announced a campaign under the slogan, "Purity and sufficient water for small rivers." With their help about 350 dams and water bodies have been constructed in the oblast which are maintaining the necessary water level in the rivers. [Text] [Moscow PRAVDA in Russian 15 Feb 77 p 2] 2174

CSO: 5000

DENMARK

COPENHAGEN TO ENFORCE ANTIPOLLUTION LAWS

Copenhagen LAND OG FOLK in Danish 18 Mar 77 p 7

[Article by Bent Christiansen: "City of Copenhagen Begins Roundup of Heavy Polluters: Environmentalists Will Stop Violations"]

[Text] In the future there will be increased pressure on many industries in the city of Copenhagen. The Environmental Chief Alsing Andersen predicts that by 1979 the extensive and quite illegal chemical pollution which is taking place today will be combatted. He tells LAND OG FOLK that the city is about to conclude its protracted effort to chart waste water pollution in Copenhagen. These investigations have given the authorities thorough knowledge of many illegal situations. And, the chief points out, this knowledge will be used. The city will begin extensive checks. Environmentalists will make unannounced visits and notify the police of those who violate environmental laws.

Copenhagen is thus the first city to respond to the recent sharp criticism in daily newspapers and to the growing demand for an effective war against environmental crimes.

Unrealistic

"Through some of its articles LAND OG FOLK has devoted much space to the question as to what extent all industries in Copenhagen deliver all their chemical waste. They probably do not; it would be unrealistic to assume that they do.

I can inform you that industries in the city of Copenhagen in 1976 delivered approximately 1,100 tons of chemical waste to the receiving station in Teglnholmsgade, while industries in the remaining part of Greater Copenhagen delivered about 3,200 tons."

Copenhagen's Environmental Chief Alsing Andersen told us this, giving in to LAND OG FOLK's demand last week that he provide the common council with an account of the city's actions against the environmental crimes committed by industry.

The chief's account contained only a few vague promises concerning effective efforts to stop industry's completely illegal treatment of several thousand tons of dangerous chemical waste in Greater Copenhagen.

#### Without Warning

Will the city of Copenhagen not make use of options available to it under the environmental laws and punish industries that violate the now 1-year-old decision concerning chemical waste by illegally continuing to empty their waste into the sewerage, in dumps or burning it off?

Environmental Chief Alsing Andersen:

There are approximately 2,500 larger or smaller industries in the city of Copenhagen that we are going to inspect regarding pollution. Of these, 700 have chemical waste problems. We have addressed ourselves to these industries several times, first through advertisements in daily papers and later through letters, sent both by the city and the Environmental Council.

Of the 700 industries, 445 have returned completed questionnaires; 173 of these reported that they had no chemical waste at all.

Could you check on the validity of this information?

This is just what we intend to do in the future. All 700 industries are going to be checked again. City environmental employees will call on them without any advance warning and, depending on how extensively the laws are being violated, they will be sentenced to pay fines according to the environmental regulations.

Alsing Andersen says further that the sanitation department's effort to chart the industrial pollution is now nearing its completion:

These investigations, which have been conducted for several years, have already disclosed that the waste water of several of the industries is far more polluted than is acceptable. In the future we will report all these instances to the police immediately.

Primarily, of course, we want to make sure that the laws are being observed. Secondly, the large purification plant at Lynnetten, which will be put into operation by 1979, will be ruined if Copenhagen's waste water continues to hold the large concentrations of chemicals it does today.

The environmental chief also assures us that he is in complete agreement with the Director of the Environmental Council Helge Odel, who recently announced that increased pressure would be exerted on both industries and municipalities to make sure they obey the laws concerning chemical and oil waste.

## Much Disagreement

The main point in the whole discussion concerning environmental crimes, however, is the amount of chemical waste. The city of Copenhagen does not think the amount is nearly as great as Kommunekemi in Nyborg estimates and for which it designed its destruction plants.

Alsing Andersen: The total amount of chemical waste has been reduced considerably in the last couple of years, because of technological developments among other things. On the other hand, we have to consider that the waste which is being produced is more concentrated than before, and this is even more reason to dispatch the waste to Kommunekemi, which was built exclusively for this purpose.

Together with representatives from the Industrial Council and Kommunekemi, the Environmental Council made a waste prognosis in 1973. It states that the amount of chemical waste was 57,000 tons in 1973, going up to 78,000 tons in 1978.

Kommunekemi informs us that they received only 20 percent of the waste to be destroyed. Industry is disposing of the remaining 80 percent illegally.

## Only 50 Percent

The Industrial Council's environmental office tells LAND OG FOLK that approximately 60,000 tons of chemical waste are being produced yearly at this time. The amount of waste has not increased as much as was estimated in 1973 because, among other things, prices on raw materials have gone up which has made industry more interested in recycling, together with the fact that some waste is being sold on the Scandinavian waste market.

Therefore, the Industrial Council points out, the prognosis of 78,000 tons per year beginning in 1978 does not quite hold true. The actual amount for the whole country will be more like 60,000 tons. Of this, one-third or 20,000 tons will be in the Greater Copenhagen area.

If we compare the Industrial Council's computations with the receipts for amounts of waste delivered, which the environmental chief has brought forward, it turns out that the industries in Greater Copenhagen only deliver about 20 percent of the chemical waste they are committed to deliver according to law.

These accounts clearly suggest the extent of the problem. The staff at Solkemi, the city of Copenhagen's receiving station for chemical and oil waste, informs us that only to a modest extent have they noticed the effects of a new decision concerning industry's duty both to report and to deliver practically all of its chemical waste.

At Kommunekemi, where they have had to go after and bring home waste from foreign countries in order to keep operating, they hope that politicians and environmental groups throughout the country will bring up these problems. The problem is not just to get industry and other waste producers to obey the laws, but also to get municipalities to do so. Based on figures submitted by Kommunekemi, the fact remains that even though municipalities are under obligation to establish receiving stations where chemical waste can be delivered, only about half of them have managed to do so.

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CSO: 5000

FRANCE

POLLUTION SAFETY WORRIES VOICED ABOUT NUCLEAR PLANTS

Paris LE MONDE in French 30 Mar 77 p 14

[Unattributed article: "Protest Against Nuclear Power Stations"]

[Text] Creys-Malville: Priests Intervene

After the statement of "distrust" of the nuclear power plant, published by some 100 Alsatian priests and pastors, 12 ecclesiastics from l'Isere and l'Ain put out a communique concerning the Creys-Malville plant. They lamented "that the public had not been sufficiently informed and had been presented, in a sense, with a fait accompli." They hoped, therefore, "that the issue would be opened up again on all levels of public life (communes, departments, regions, Parliament)."

Fessenheim: A Statement by the French and German Committees

A halt of the French nuclear power plant at Fessenheim (Haut-Rhin) was demanded again by the German and French environmental defense committees of Bade-Wurtemberg and Alsace on Monday, 28 March, at Fribourg-en-Brisgau (Federal Republic of Germany). In a joint statement, the committees denounced the gaps they insisted they had discovered in the security measures planned by the authorities of the Fribourg region in case of nuclear catastrophe at Fribourg. The protesters base their claims on a document recently stolen from German authorities.

Moreover, Prefect of Haut-Rhin Gabriel Gilly filed a complaint against X... after a false nuclear alert set off on the night of 26-27 March in three villages near the Fessenheim nuclear plant. In a communique, the prefect "appealed to public opinion to severely condemn" the perpetrators of that false alarm and stressed "their total disregard for the people."

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FRANCE

BRIEFS

POLLUTION PROTEST ENDS--On Thursday morning, 31 March, the sailor-fishermen of the Seine bay voted by secret ballot to end the blockade of the port of Le Havre, which began Monday to protest against the damages of pollution in the Seine and on its banks. The decision was made by a very large majority of 112 representatives of the crews of the trawlers: 99 votes in favor of lifting the blockade, 12 against and one void ballot. The vote was decided Wednesday evening, after the prime minister's announcement of the creation of a special commission. [Text] [Paris LE MONDE in French 1 Apr 77 p 36] 11937

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GREECE

GOVERNMENT DECIDES ON URBAN, INDUSTRIAL POLLUTION STUDY

Athens ELEVTHERTYPIA in Greek 17 Feb 77 p 3

[Text] The government has decided to conduct a study on the pollution of the gulfs of Saronikos, Thermaikos, and Pagasitikos by industrial and urban wastes. The government has already instructed the appropriate services to study the oceanographic conditions in these sea areas.

Later, pollution studies will be conducted for the seas of Thrakikon Pelagos, North and South Evoikon, Iraklion, Khandia, Patrae, and Kalamata. A pollution study of the remaining seas will follow.

Deputy Minister of Coordination Ar. Kalandsakos said that these studies will recommend the proper site for submarine sewerage pipelines (specify their length and the depth they should be placed at). The studies will also specify the rate of dissolution and distribution of the wastes to be discharged; and this, to prevent any physical, chemical, biological, and economic changes in the waters.

Adjacent areas will thus be protected from the pollution created by wastes that reach them with the help of sea currents. At the same time it will be possible to determine the volume of waste the area could absorb as well as the necessary processing stages to protect the environment adequately.

The study will be conducted with the cooperation of the appropriate services in the Ministry of Public Works, of the Hydrographic Service of the Navy, of Dimokritos (nuclear center), of the Public Petroleum Corporation, and of the Institute of Oceanographic and Fishing Studies.

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FISH STOCK THREATENED BY ACID IN MELTING SNOW

Stockholm DAGENS NYHETER in Swedish 9 Mar 77 p 40

[Article by Rune B. Axelsson: "Acidity Kills Crayfish"]

[Text] The water from melting snow is a definite threat to the fish stock in many of our lakes and watercourses. For the crayfish, the situation is even worse. The cause is that quantities of acid precipitation is stored in the snow. During spring floods this is carried to the lakes in the form of acidity charges.

The State Environment Protection Administration is closely watching what is taking place. In several areas, shocking observations have been made. As an example may be mentioned one of the very best trout lakes of the east coast, with its outflow at Sodertorn. There a pH value was measured this week that was only insignificantly above 5; a value that constitutes a direct threat to the spawn soon to be hatched and to the young fish.

The situation is the same in large parts of southern and central Sweden, not only in the areas normally described as most sensitive to pollution. Among the latter are Blekinge, Kronoborg, Halland, Goeteborg, Bohus, and Vaermland provinces.

Director of Ecology Karin Brunsberg, bureau director of the environment protection unit in Blekinge, has prepared a report to clarify the situation in her region.

She calls attention to the fact that even at a pH value of about 6, the amount of animal plankton is reduced. At 5.8 the same thing happens to vegetable plankton; at 5.5 the proliferation of the roach is disturbed, and at 5 the stock of trout and char is killed off. Water below 5.5 practically never contains crayfish.

A problem of recent times is that the natural resistance to pollution, usually referred to as buffering ability or alkalinity, has dropped steadily in recent years. The preponderant cause is sulphuric precipitation, caused in turn by extensive use of oil as a fuel, both in Sweden and in the large industrial regions abroad.

In many areas a threshold level has been reached, where the lakes are extremely sensitive to further increase in the acidity. An occasional

reduction of the pH value suffices to cause damage. This is just what is feared in lakes that already have low pH values.

The situation is the same in many areas of the country.

"It is primarily on the latter level that we have problems," says Fisheries Consultant Ingvar Josefsson of Vaexsjo. "Some of the country's best crayfish lakes are found in Kronoborg Province. Even though the pH value is not yet disturbingly low, the situation is very serious because the defense of the lakes against acidity is often minimal or simply nonexistent."

The only long-term defense against acidity is limitation of air pollution here at home and in the rest of the world. For the short term the situation can be improved through liming the lakes or their tributaries.

For this purpose the Fisheries Administration has set aside 50 million kronor for an experiment of several years duration. Readiness to start such efforts is low, however, and no more extensive efforts are to be expected for this year. Nevertheless, this emergency measure is being introduced to the extent possible in some scattered lakes, at times producing immediate good results. The problem is that of getting ahead of spring floods, when the best effect is obtained.

Slow snow melt, occurring late in the season, is most favorable as concerns combating acidity. The greatest damage is caused when the melt water runs directly into the lakes due to deep frost in the ground and heavy ditching of surrounding bogs.

The only positive element this year in this extremely critical situation is that there is not a great deal of frost in the ground. On the other hand, the amount of snow is very great and the snow is very acid.

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TURKEY

DEVICE INVENTED TO REDUCE MUNICIPAL AIR POLLUTION

Ankara BARIS in Turkish 5 Mar 77 p 1

[Text] A device which could solve the air pollution problem daily threatening the health of Ankara residents has been installed on the State Hydraulic Affairs building and began operation yesterday. The system, invented by Major Behcet Baskent, turns smoke into liquid.

The device was developed with funds from the Ministry of Industry and Technology and costs between 7,000 and 10,000 liras for a 20-unit apartment building.

Fuel Smoke Liquified

Behcet Baskent said in his statement that the device could be built more economically by using different construction materials. He said that it requires no maintenance and that a one-time installation is all that is required. Chemical reactions and meteorological phenomena take place in what is called the ventor pipe of the device in a process that turns smoke into liquid.

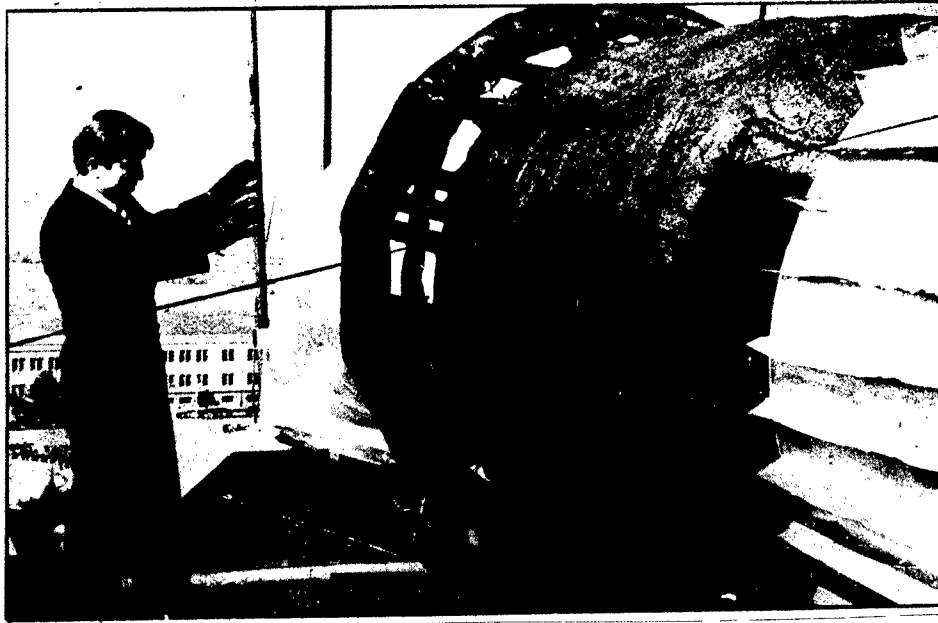
Following a positive report on the air-cleaning device by the ODTU [Middle East Technical University], Behcet Baskent announced that he owned the Turkish patent and said:

"This instrument is not a filter. Unlike filters that remove only particles, it also removes gases. This has been scientifically tested and proved at ODTU."

"The liquid produced in the device can be used as a raw material in industry," said Baskent, who added that he was continuing his work in this regard.



Air Force Major Baskent gives information about the device which has been installed on the smokestack and is now in operation at the building housing the State Hydraulic Affairs Directorate General.



The air-cleaning device, the patent for which is held by Major Baskent, costs between 7,000 and 10,000 liras and liquifies the toxic bases in smoke.

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TURKEY

IZMIR HARBORMASTER COMPLAINS OF POLLUTION

Istanbul AKSAM in Turkish 8 Mar 77 p 5

[Text] Izmir - Refuse and garbage dumped into the sea has been blamed for speeding pollution of the gulf.

Izmir harbormaster Zekai Ucal claims that ships plying the gulf are care-  
less about polluting the water, especially in harbor, and are violating the  
regulations.

Stating that the existing regulations forbid pollution of the water and the  
dumping of refuse by ships, harbormaster Zekai Ucal said, "In spite of  
this, some ships that enter the gulf and load and unload in the harbor are  
violating these regulations and are polluting the waters of the gulf."

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