IRCWD NEWS

WHO International Reference Centre for Wastes Disposal

Ueberlandstrasse 133, CH-8600 Duebendorf / Switzerland

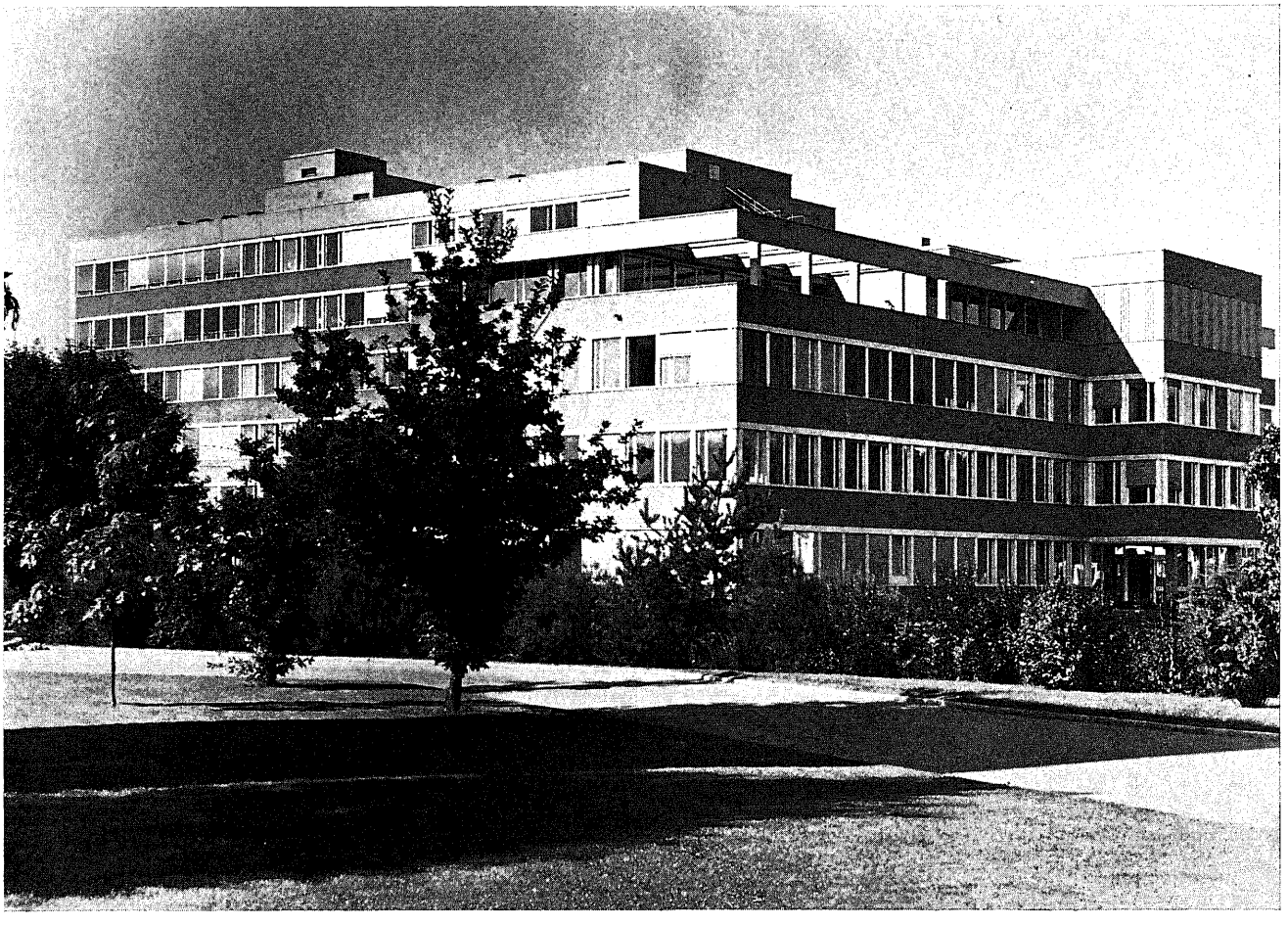
No 1 March 1971

Introducing "IRCWD News"

In view of the proliferation of agencies involved in wastes management and the wide range of alternatives for disposal, a systematic and international program is sorely needed to coordinate individual efforts. To this end, the WHO International Reference Centre for Wastes Disposal hopes to be able to act as an intermediary between related institutes and specialized circles; its aim is to set up guidelines for effective wastes management, evaluate and disseminate information on disposal practices and coordinate research programs.

As close contact is a basic element of smooth coordination, the "IRCWD News" will represent an indispensable means of communication. Until now the institutes collaborating in WHO programs for wastes management have, as could be deduced from the questionnaire "Who is Who in the WHO Program for Wastes Disposal", sent their articles to a great number of different publications. The "IRCWD News" is designed to provide a single, common organ for articles on wastes management and to keep specialists abreast of new developments. It is hoped that the ties between the collaborating institutes can thus be strengthened and collaboration facilitated and promoted.

The "IRCWD News" will publish technical articles and scientific findings submitted by the collaborating institutes and WHO headquarters and is intended as



The new EAWAG building in Duebendorf

a forum for the discussion of technical problems. It will also contain general news and personnel items. A separate column will be reserved for WHO headquarters and the WHO IRC for Wastes Disposal; news flashes and personnel matters from collaborating institutes will be grouped under a section permanently set aside for this purpose. Letters to the editor are more than welcome and will be published on the last page.

Publication has been planned on a quarter-yearly basis. All collaborating institutes as well as specialists in wastes management are cordially invited to send their contributions and letters to the WHO IRC for Wastes Disposal, where they will be submitted to a panel of experts for approval.

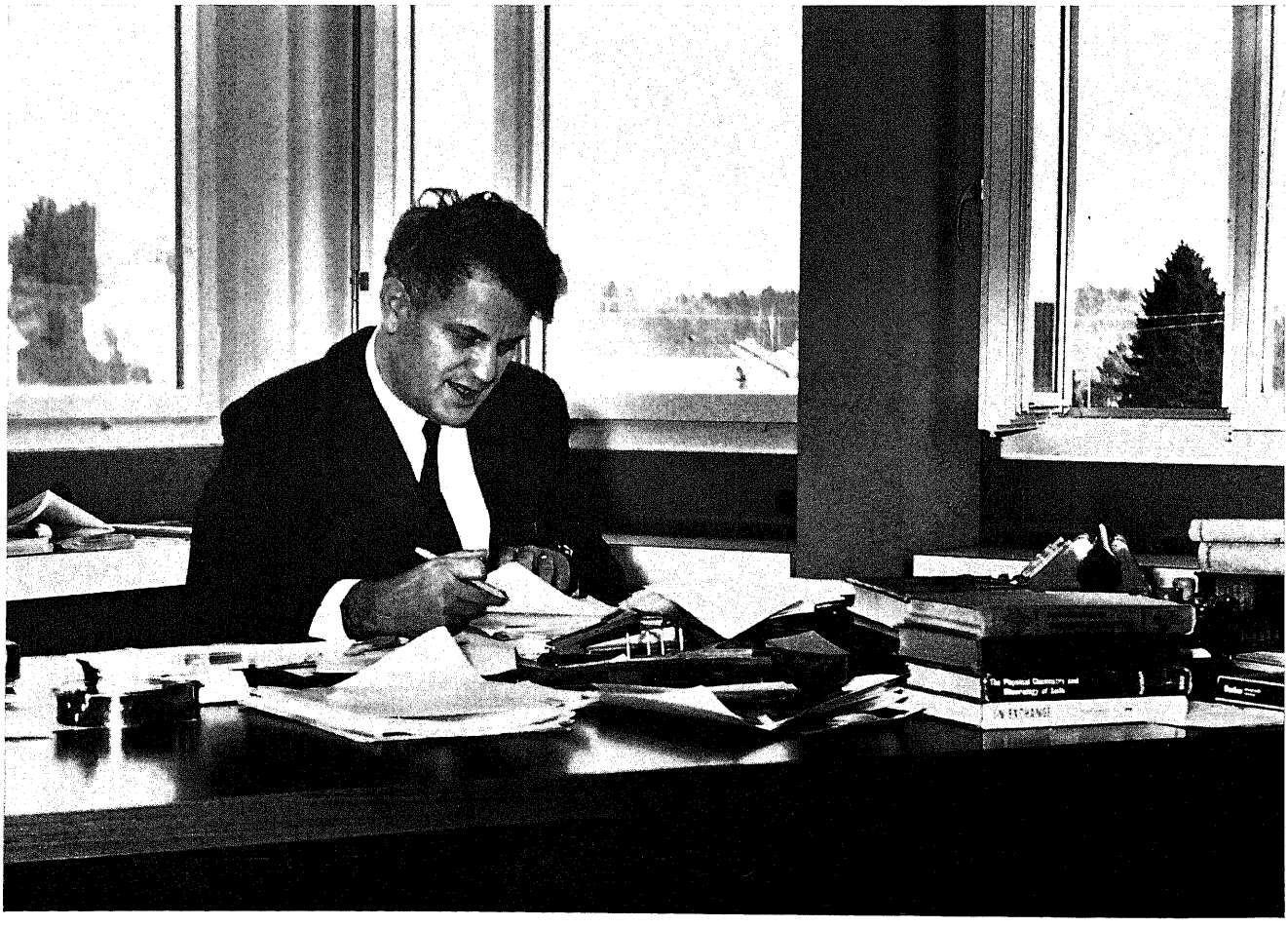
The present issue will, it is hoped, serve as an ice-breaker and help the collaborating institutes get acquainted with each other. Distilled from the "Who is Who" questionnaire, this first issue lists the research projects of the collaborating institutes, their educational programs and research equipment and facilities.

The WHO IRC for Wastes Disposal should now like to thank all those institutes and organizations that cooperated in filling out its questionnaire and only regrets that not all 40 institutes could participate. The staff trusts that the respective institutes will now get directly in touch with each other on research programs and that these efforts will benefit all involved.

IRCWD Column

As many of our readers may have heard, there have been some new developments at the International Reference Centre for Wastes Disposal. In May 1970 the Swiss Federal Institute for Water Resources and Water Pollution Control (EAWAG), of which the IRC for Wastes Disposal is an annex, moved to Duebendorf, 5 miles from Zurich. The new building boasts inter alia well-equipped laboratories, possibilities for electronic data processing, a greenhouse for composting experiments and modern, spacious offices. Most important, however, is the fact that all the sections of the Institute have now been brought under one roof.

In addition, the IRC for Wastes Disposal and EAWAG have also received a new director. Prof. Dr. O. Jaag, who assisted in the establishment of the IRC, retired in October 1970 but is still very active and will remain available for counseling and public relations work. The post has been taken over by Prof. Dr. Werner Stumm, whom we welcome back from a long stay in the United States, where he was Gordon McKay Professor of Applied Chemistry at Havard University.



The Director at work

Research Programs of WHO Collaborating Institutes

A. Water and Wastewater

Collaborating Institute*	Current Programs	Planned Programs
Institut für Wasserversorgung, Abwasserreinigung und Gewässerschutz, Vienna, Austria	Oxygen transfer in aeration tanks Treatment plants for small settlements Virus removal from activated sludge	Aerobic stabilization Development of equipment for COD determination Digester mixing
Centre belge d'Etude et de Documentation des Eaux (CEBEDEAU), Liège, Belgium	Water pollution control in general; no specific projects mentioned	
School of Public Health, Sao Paulo, Brazil		Water pollution research
Institut de Recherches en Hygiène (NIHI), Sofia, Bulgaria	Water pollution control in general; no specific projects mentioned	
Institut de Recherches hydrologiques, Nancy, France	The effects of polyelectrolytes (organic) in flocculation Treatment of coal washing wastewaters from the mining industry Treatment of wastewaters containing cyanide and phenol Tertiary treatment of domestic wastewater	
Centre d'Etudes et Recherches des Charbonnages de France, Paris, France	Application of the CERCHAR-process of calcination in the treatment of effluents and sludges Treatment of industrial wastes by absorption Treatment of drinking-water with activated carbon	Dewatering of sludges by heat treatment
Institut National de Recherche chimique appliquée (IRCHA), Vert-le-Petit, France	Water pollution control in general	
Research Institute for Water Resources Development (VITUKI), Budapest, Hungary	Water quality studies for surface and lake water Radioactive contamination and registration Land disposal of municipal and industrial wastewater Development of a respirometer and its use in wastewater treatment Dewatering ability of industrial and domestic wastewater sludges Aerobic and anaerobic treatment of wastewater and industrial sewage sludge Effect of condensates on the BOD of wastewater Stabilization ponds Study on the zeta potential of suspended material in connection with hydrometeorologic factors Influence of oxidation processes on taste and odor deteriorating materials Investigation of open rapid sand filters Studies on coagulation and flocculation Application of ozone and activated carbon in water treatment	Joint treatment of communal and industrial wastewater
Central Public Health Engineering Research Institute, Nagpur, India	Low-cost wastewater treatment methods in stabilization ponds ,aerated lagoons, oxidation ditches Design criteria for conventional sewage treatment plants under Indian conditions Cultivation of essential oil-bearing plants (citronella and mentha) on sewage effluents Removal of human parasitic helminths and bacteria pathogens Optimum utilization of treated and untreated sewage for irrigation	Anaerobic contact filter Algal harvesting Pisciculture Tertiary treatment of sewage and re-use of wastewater for industrial purposes Utilization of liquid aerobic sludge - slurry for irrigation

* complete addresses appear in the annual report of the IRC for Wastes Disposal

Collaborating Institute	Current Programs	Planned Programs
Institute of Public Health Research, Teheran, Iran	Excreta disposal Lagooning Sewerage systems for hospitals	
Istituto di Ingegneria Sanitaria, Milan, Italy	Water pollution control in general; no specific projects mentioned	
Centro Studi e Ricerche di Ingegneria Sanitaria, Naples, Italy	Electrochemical treatment of sewage Survey of the lakes and rivers of the "Campania" region	
Japan Environmental Sanitation Center, Kawasaki-City, Japan	Water pollution control in general; no specific projects mentioned	
Government Institute of Sewage and Waste Treatment Voorburg, Netherlands	Mechanical sludge dewatering Transport of wastewater via long pipelines of small diameter	Phosphate elimination Sludge digestion
Works Division Auckland Regional Authority, Auckland, New Zealand	Odor control Studies on oxidation ponds	
Department of Civil Engineering, Ahmadu Bello University, Zaria, Nigeria		Studies on oxidation ponds Reuse of wastewater
National Institute of Public Health, Oslo, Norway	Analytical methods for the determination of trace elements	Analysis of pesticides
Norwegian Institute for Water Research Norway	Study of the distribution of iron hydroxide particles Significance of suspended solids in relation to fish production Self-purification process Study of eutrophication Testing the effects of toxic substances on fish Phosphorus elimination	Water pollution caused by mining industry Dewatering of sludge Biological stabilization and dewatering of sludge from septic tanks Use of terrestial recipients for wastewater discharge Registration of industrial effluents
Pan American Center for Sanitary Engineering and Environmental Sciences, Lima, Peru	Studies on oxidation ponds	
National Institute for Water Research, Pretoria, South Africa	Reclamation of wastewater and industrial effluents for domestic and industrial use Studies on activated sludge systems Bacteriology, virology and parasitology of wastewater esp. hospital wastes Utilization of algal systems for treatment of wastewater Anaerobic fermentation process Pollution parameters for beaches, estuaries and nearshore waters Marine disposal of effluents Storage and purification of water in natural sand beds	
Division of Environmental Engineering Asian Institute of Technology, Bangkok, Thailand	Study of mass algal culture growth limiting factor Effects of pH on anaerobic stabilization pond performance Alum recovery from algal slurry Effects of BOD loading and detention time on anaerobic pond performance Reclamation of oxidation pond effluent for reuse Comparison of feasible drying techniques applied to mass algal production Harvesting of algae through chemical flocculation and flotation Factors affecting algal yield from high-rate oxidation ponds Oxygen consumption of bottom muds	
Water Pollution Research Laboratory, Stevenage, United Kingdom	Optimization of treatment processes River and coastal pollution	
Robert A. Taft Water Research Center, FWQA, Cincinnati, USA	Extensive research programs; specific projects not listed here	

B. Industrial Wastes

Collaborating Institute	Current Programs	Planned Programs
Institut für Wasserversorgung, Abwasserreinigung und Gewässerschutz, Vienna, Austria	Aerobic treatment of tannery wastes and textile mill wastes	Treatment of pulp mill wastes Development of plants for the treatment of small quantities of dairy wastes
Centre belge d'Etude et de Documentation des Eaux (CEBEDEAU), Liège, Belgium		Corrosion in incineration plants for solid and liquid wastes
School of Public Health, Sao Paulo, Brazil		Study of industrial wastes in connection with environmental pollution control
Centre d'Etudes et Recherches des Charbonnages de France, Paris, France	Treatment methods for coking-plant effluents Incineration of industrial wastes Industrial wastewater treatment	
Institut national de Recherche chimique appliquée, Vert-le-Petit, France	Protein recovery from industrial wastewater for fodder Treatment of wastes from the agricultural, tanning, paper, and chemical industry	
Institut de Recherches hydrologiques, Nancy, France	Treatment of flue gas scrubbing residues from «KALDO incinerators» Mechanisms of organic polyelectrolytes in flocculation Treatment of coal washing effluents Treatment of wastewater containing cyanide and phenol Treatment of flue gas scrubbing effluents from the iron and steel industry	
Research Institute for Water Resources Development, Budapest, Hungary	Development of instruments for the detection of toxic industrial wastes Treatment and disposal of protein processing and dairy wastes Petroleum and textile industry wastewater treatment	
Central Public Health Engineering Research Institute, Nagpur, India	Treatment of pulp and paper-mill, sugar and distillery, tannery, chemical and pharmaceutical, fertilizer factory, slaughterhouse, rayon pulp mill, vegetable oil, instant coffee and starch manufacture wastes Recovery of zinc from rayon manufacturing wastes	Milk and dairy wastes Growing yeast on prehydrolysate liquor in rayon pulp mill wastes for use as fodder Distillery wastes
Works Division Auckland Regional Authority, Auckland, New Zealand	Treatment of dairy and meat wastes	
Institute of Public Health Research, Teheran, Iran	Treatment of cannery wastes Water pollution caused by manure disposal	
Centro Studi e Ricerche di Ingegneria Sanitaria, Naples, Italy	Investigations on effluents discharged by Naples' industry	
Istituto di Ingegneria Sanitaria, Milan, Italy	Digestion of blood and other slaughterhouse wastes	Influence of toxic substances on BOD determination and biological treatment
Department of Civil Engineering, Ahmadu Bello University, Zaria, Nigeria		Treatment of meat-processing wastes Treatment and disposal of textile effluents
National Institute of Public Health, Oslo, Norway	Analysis of trace elements	Treatment of effluents from paper and pulp industries
Norwegian Institute for Water Research, Oslo, Norway		Registration of industrial effluents Use of liquid-liquid extraction in the purification of industrial wastewater
Pan American Center for Sanitary Engineering and Environmental Sciences, Lima, Peru		Treatment of coffee mill wastes

Collaborating Institute	Current Programs	Planned Programs
National Institute for Water Research, Pretoria, South Africa	Water and effluent management in the pulp, paper and board milling industries Marine disposal of industrial wastes Disposal of mineralized industrial effluents by irrigation Treatment of winery effluents	
Division of Environmental Engineering Asian Institute of Technology, Bankok, Thailand	Biological disc filter for waste treatment in tropical climates Low-cost and aerobic treatment of tapioca starch	
Water Pollution Research Laboratory, Stevenage, United Kingdom	Extensive research program; no specific information given	
Taft Water Research Center Federal Water Quality Administration, Cincinnati, USA	Extensive research program; no specific projects mentioned	Feasibility and development of treatment for industrial wastes

C. Solid Wastes

Collaborating Institute	Current Programs	Planned Programs
Centre belge d'Etude et de Documentation des Eaux (CEBEDEAU), Liège, Belgium		Dewatering and disposal of sludges Thermal treatment of sludges
School of Public Health, Sao Paulo, Brazil	Economic aspects of solid waste disposal Reuse of wastes	
Institut de Recherches en Hygiène (NIHI), Sofia, Bulgaria	Study of the composition and quantity of urban wastes for more effective collection and treatment Utilization of solid wastes in agriculture	
Institut de Recherches hydrologiques, Nancy, France	Treatment and dehydration of sludges	
Centre d'Etudes et Recherches des Charbonnages de France, Paris, France	Study of emissions and pollutants from incineration Fluidized bed incineration Pyrolysis	Pollution caused by tipping incineration residues
Institut national de Recherche chimique appliquée, Vert-le-Petit, France	Fermentation of fecal matter and slaughterhouse wastes Composting of vegetal wastes	
Research Institute for Water Resources Development (VITUKI), Budapest, Hungary	Solid wastes management, no specific projects mentioned	
Central Public Health Engineering Research Institute, Nagpur, India	Composting of blow-room cotton dust Compilation of refuse collection data Comparative study of windrow composting and mulching Incineration of market refuse in pilot plants	Standardization of methods of sampling and analysis of solid wastes Pollution of ground and surface water from sanitary landfills Cost aspects of various treatment and disposal methods
Institute of Public Health Research, Teheran, Iran	Refuse disposal and composting, no specific projects mentioned	
Istituto di Ingegneria Sanitaria, Milan, Italy	Studies on sanitary landfilling	
Japan Environmental Sanitation Center, Kawasaki-City, Japan	Solid Wastes Management; no specific projects mentioned	
Solid Waste Foundation, Amersfoort, Netherlands	Investigations on water pollution near sanitary landfills	Agricultural wastes management
Department of Civil Engineering, Ahmadu Bello University, Zaria, Nigeria	Solid wastes management; no specific projects mentioned	
Norwegian Institute for Water Research, Norway		Pollutional problems of the mining industry Dewatering of municipal sludge Biological stabilization and dewatering of sludge
National Institute for Water Research, Pretoria, South Africa	Evaluation of composting plants	
Division of Environmental Engineering Asian Institute of Technology, Bangkok, Thailand	Power production from waste incineration	

Documentation and Educational Programs

Collaborating Institute	Documentation	Advanced study programs	Training Courses	Exchange of technical personnel	Seminars, Symposia	Willing to acept trainees	Publications
Institute for Water Supply, Sewage Purification, Water Pollution Control, Austria			x	x	x	x	"Wiener Mitteilungen für Wasser, Abwasser und Gewässer"
CEBEDEAU, Liège, Belgium	x	x		x	x	x	"La Tribune du CEBEDEAU"
School of Public Health, Sao Paulo, Brazil		x	x			x	bulletins
Institute of Hygiene Research (NIHI), Sofia, Bulgaria	x[1]	x	x	x	x	x[1]	"Hygiena Zdraveopazvane", "Sbornik Trudove Na NIHI" "Letopisi Na HEI",
Institut de Recherches Hydrologiques, Nancy, France	x					x	Periodical report "L'Eau", "La Tribune du CEBEDEAU"
Centre d'Etude et Recherches des Charbonnages de France, Paris, France	x					x	Annual Report
IRCHA, Vert-le-Petit, France	x		x			x	internal notes, magazines
Central Office for Wastes Disposal, Berlin, Federal Republic of Germany	x[1]						bulletins
VITUKI, Budapest, Hungary		x		x		x	publication of abstracts
Central Public Health Engineering Research Institute, Nagpur, India		x	x	x	x	x	technical reports "Environmental Health", "Technical Digest"
Institute of Public Health, Teheran, Iran		x	x	x	x	x	x (in Persian)
Institute for Sanitary Engineering, Milan, Italy		x	x	x	x	x	"Ingegneria Sanitaria"
Research Center for Sanitary Engineering, Naples, Italy	x	x	x	x	x	x	bulletin of the Istituto di Recerche sulle Acqua

Collaborating Institute	Documentation	Advanced study programs	Training Courses	Exchange of technical personnel	Seminars, Symposia	Willing to accept trainees	Publications
Japan Environmental Sanitation Center, Kawasaki-City, Japan			x		x		"Life & Environment" (Japanese)
Department of Civil Engineering, University of East Africa, Nairobi, Kenya		x[2]				x	—
Solid Waste Foundation, Amersfoort, Netherlands	x	x[2]	x[2]		x[1]		—
Government Institute of Sewage Purification, Voorburg, Netherlands	x		x			x	"H_2O", "Medelingen van het Rijksinstituut voor Zuivering van Afvalwater"
Works Division Auckland Regional Authority, Auckland, New Zealand			x			x	annual report, journal of Institute for Water Pollution Control
Department of Civil Engineering, Ahmadu, Bello University, Zaria, Nigeria				x		x	—
Norwegian Institute for Water Research, Oslo, Norway			x	x	x	x	internal reports
Department of Sanitary Engineering, Oslo, Norway				x	x	x	reports (Norwegian)
Pan American Sanitary Engineering and Environmental Sciences Center, Lima, Peru			x[3]	x[3]	x[3]		project reports
National Institute for Water Research, Pretoria, South Africa	x						scientific journals reports
Environmental Engineering Division, Asian Institute of Technology, Bangkok, Thailand	x	x	x		x	x	technical reports available through AIT Library
Water Pollution Research Laboratory, Stevenage, United Kingdom	x		x				annual report "Water Pollution Abstracts"
Center for Research in Water Resources, University of Texas, Austin, USA	x	x			x	x	—
Taft Water Research Center, Cincinnati, USA			x	x	x	x	reports

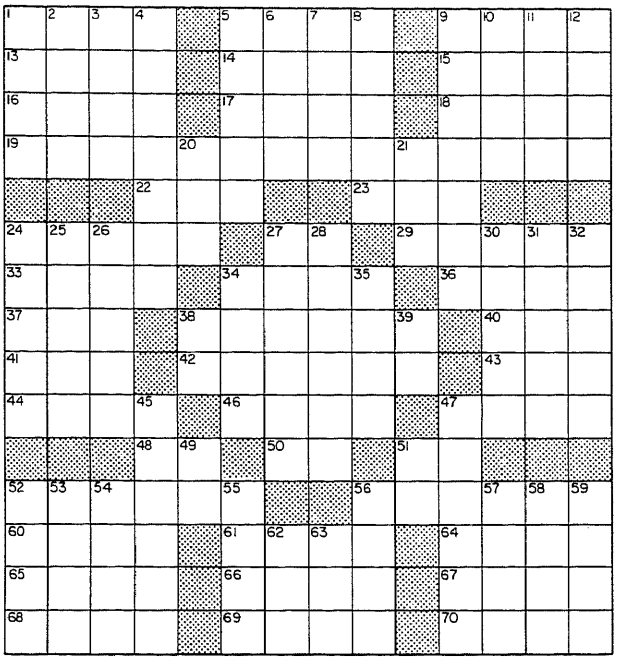
1 planned 2 undergraduate courses 3 can serve as intermediary

Equipment and Facilities

All the collaborating institutes listed have laboratory facilities. Only specific installations are mentioned here. Collaborating Institute	Pilot Plant for Water & Wastewater Treatment	River & Hydraulic Models	Field Research Station	Computer	Pilot Facilities for Incineration	Pilot Facilities for Composting
Austria Institute for Water Supply, Sewage Purification and Water Pollution Control, Vienna	x[4]					
Belgium Centre belge d'Etude et de Documentation des Eaux, Liège	x[4]					
Brazil Faculty of Public Health, Sao Paulo						
Bulgaria Institute of Hygiene Research (NIHI), Sofia						
France Institut de Recherches Hydrologiques, Nancy	x[4]					
France Centre d'Etude et Recherches des Charbonnages de France, Paris					x	
France Institut national de Recherche chimique appliquée Vert-le-Petit	x[2]				x	x
Hungary Research Institute for Water Resources Development (VITUKI), Budapest	x					
India Central Public Health Engineering Research Institute, Nagpur	x[4]					x
Iran Institute of Public Health Research, Teheran			x			
Italy Institute for Sanitary Engineering, Milan	x[4]					
Italy Research Center for Sanitary Engineering, Naples	x[1 2]					
Japan Environmental Sanitation Center, Kawasaki-City						
Kenya Dept. of Civil Engineering University of East Africa, Nairobi						
Netherlands Institute for Wastewater Treatment, Voorburg	x[1 2]					
New Zealand Works Division, Auckland Regional Authority, Auckland	x[1 2]					
Nigeria Dept. of Civil Engineering, Ahmadu Bello University, Zaria						
Norway Norwegian Institute for Water Research, Oslo 3	x[1 2]	x				
Norway National Institute of Public Health, Oslo 4						
South Africa National Institute for Water Research, Pretoria	x[1 2]					
Thailand Asian Institute of Technology, Bangkok	x[1 2]		x			
United Kingdom Water Pollution Research Laboratory, Stevenage	x[4]					
USA Center for Research in Water Resources, University of Texas at Austin	x[1 2]	x		x		
USA Robert A. Taft Water Research Center, FWQA, Cincinnati	x[4]					

[1] mechanical processes [2] biological processes [3] chemical processes [4] combinations thereof

Pollution Puzzle



Across:

1. "The . . . ", Faulkner short story
5. Biblical figure (aa=a)
9. . . . of fare
13. Early Modern English (abb.)
14. Large desert in Asia
15. Tributary of the Danube in Bavaria
16. Peruse
17. Like a bump on . . . (1,3)
18. Sea of the Antarctic Ocean
19. Type of incineration furnace
22. . . . in the hole
23. Give tit for . . .
24. Beaded one whose philosophy is in harmony with pollution control
27. European currency (abb.)
29. Desirable aim in wastes management
33. Man-eating monster
34. Wharf
36. Winter problem for public cleansing authorities
37. L'. . . de Maurice
38. Type of turbine
40. Suffix used in chemistry
41. Help!
42. Organic . . .
43. Hydrocarbon
44. Fling
46. View
47. Fewer
48. French article
50. Railroad (abb.)
51. Chemical symbol
52. Household wastes
56. Brandy
60. Old
61. Volcanic mountain in Sicily
64. Soft slime
65. Be in a state of excitement
66. Untruthful one
67. Emission
68. Faction
69. French numeral
70. Home for some

Down:

1. Landscaping feature after completion of a landfill
2. Large Australian bird
3. Chemical determination of nature (abb.)
4. Feature of bureaucracy
5. Altruistic love
6. Bakery product
7. Wind instrument
8. . . . soil
9. Scolds
10. Masculine name in USSR
11. Final
12. Luxuriant
20. Kind of reception
21. Unit of corn
24. Lift
25. Type of shelter
26. Process connected with baling
27. Remove impurities
28. "The Purloined . . . " by E.A. Poe
30. Merge
31. Afternoon treats
32. Water pitchers
34. Dinner party trouble-makers
35. Various species of deer
38. Afternoon
39. In the vicinity (abb.)
45. Sewage . . .
47. Dumping site for semi-liquid wastes
49. Adverb used in similes
51. Expression of refusal
52. Small island east of Java
53. Swiss hamlet near Innertkirchen in the Bernese Alps
54. Fief
55. Living refuse disposal units in rivers and ocean
56. Put the . . . before the horse
57. Dilemma
58. Brightly colored nitrogen compounds
59. Guaranteed (abb.)
62. Bind
63. Cat . . .

Answers appear in next issue — The Ed

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