

PHYSICS

Danger to Streams

► **RADIOACTIVE WASTES** from atomic reactors and uranium mills discharged into the nation's rivers and streams may make the waters dangerous for other uses unless a continual check is kept on radioactivity levels.

Possible contamination of the country's water supply by radioactive wastes was reported to the 1957 Nuclear Congress in Philadelphia by E. C. Tsivoglou and W. Marcus Ingram of the Robert A. Taft Sanitary Engineering Center, Cincinnati, and E. D. Harvard of the Atomic Energy office for the Pittsburgh area.

Stream surveys for each particular site are needed because of the "peculiar character of radioactive wastes and the manner in which they affect the stream." Unlike other organic pollutants, radioactive materials do not purify themselves as they move downstream.

PSYCHOLOGY

Hi-Fi Turns Out Addicts

► **HI-FI**, the musical hobby that has swept the country, is also turning out addicts who need a psychiatrist, Dr. H. Angus Bowes, clinical director in psychiatry, Ste. Anne's Hospital, Quebec, Canada, reported to the Eastern Psychiatric Research Association, Inc., meeting in New York.

Dr. Bowes, a Hi-Fi fan himself, began his study of the music addicts some 12 years ago in England. The courts there sent him as his first cases enthusiasts who were blasting the neighbors with their larger-than-life sound.

Enjoying recorded music is no indication of psychological disturbance in itself, Dr. Bowes emphasized, but when the Hi-Fi fan loses himself in his insatiable desire for bizarre recorded sounds, he becomes a true addict.

A genuine enthusiast usually keeps the music soft, but the addicts use their Hi-Fi set as a power symbol and as a way of keeping ahead of the Joneses, Dr. Bowes reported.

The addict gets a great feeling of control when, with a flick of the wrist, he can attenuate his treble, emphasize his bass, turn the volume down to a whisper or blast his neighborhood with a "Niagara" of sound.

One addict said he would not be satisfied until he could hear the drip of saliva from the French horns as they were emptied after a powerful brass passage, Dr. Bowes reported.

Other addicts will take loud, aggressive passages from different works, record them individually on tape and play them back together as a continuous, sadistic psychotic symphony, he said.

Hi-Fi addicts have written to him about

The three scientists pointed out that not much is now known concerning human uptake of radioactive elements and their effects on the body when ingested. Especially, they said, is there ignorance concerning the "long-term effects of chronic exposure to radioactive materials in low concentration."

Also unknown are the extent and significance of radio elements on plants and fish in the streams.

The only answer they see is to "proceed with caution" in disposing of radioactive liquid wastes. Otherwise, such stream uses as irrigation of croplands, stock watering, commercial and sports fishing, for industrial and domestic water supplies, and recreation, will be impaired or prevented.

Modern water resources philosophy, they note, stresses the development of multiple stream use, and opposes using waters for

a single purpose, as waste disposal, to the exclusion of other desirable uses.

Radioactive materials can be beneficial when used as tracers to study the flow of water in many ways, Dr. Conrad P. Straub and C. Richard Hagee, also of the Taft Center, reported at the same meeting.

They cited the mixing of water in pipes, the determination of flow time and dispersion in streams and rivers, artificial basins and ground water, distribution of pollution in oceans, evaluation of the removal of bomb debris from the atmosphere as examples of new uses for radioelements.

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OPTICS

Greater Accuracy Gained In Optical Flats

See Front Cover

► **ACCURACY** to a millionth of an inch is shown in the composite photograph of an optical flat at progressive stages of completion which appears on the cover. The flat at the far right shows the results of continued polishing until the refractory pattern is a perfect circle. The pictures were taken in an interferometer at Northrop Aircraft's Pasadena Optical Laboratory.

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