JAN - JUNE 89

RECORD TYPE	: P
SUB TYPE	: S
SECURITY CODE	:
FUNDING BODY	:
ORGANIZATION	: ITL CANADA
GROUP NUMBER	: 444
LOCAL PROJECT NUMBER(S)	: T-7708;04
PROJECT TITLE	: Biological Effects of Tobacco Smoke and Tobacco Extracts in Short Term Tests
PERSON RESPONSIBLE	: BILIMORIA,M.H.
EFFORT	: 1989
PROJECT DESCRIPTION	: Bacterial tests will be employed to study the mutagenicity of smoke condensates from ITL and opposition brands, as well as new market entries, to ensure that ITL products rank favourably in a comparative study. By determining the mutagenicity of smoke condensates and fractions from different cigarettes smoked under different conditions, the aim is to identify those parameters which affect mutagenicity. The effect of additives on condensate mutagenicity will also be studied as will smokeless tobacco products.
SCOPE	: GROUP
DEPTH	: APPLIED/DEVELOPMENT
FUNCTION	: PUBLIC AFFAIRS
OBJECTIVE	: REGULATORY
CLUSTER	: BIOLOGY
DATE REVIEW WRITTEN	: July 1989
REVIEW TITLE	: Biological Effects of Tobacco Smoke and Tobacco Extracts in Short Term Tests
REVIEW TEXT	: Increased use of Ames mutagenicity testing in the ITL research programme has significantly increased the demand for rat liver extract (S9) used to metabolize smoke condensate to a form mutagenic towards Salmonella typhimurium TA98. Since Aroclor 1254 used to treat Sprague-Dawley rats for preparation of liver S9, is no longer available commercially, our limited supply of Aroclor is being depleted and a substitute is being sought.

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In earlier studies we have shown that 3-methylcholanthrene treatment of rodents results in the preparation of a highly active S9, but this chemical is a carcinogen and to be avoided. B-Naphthoflavone, known to be an inducer of cytochrome P-448, the type of cytochrome involved in the activation of smoke condensate, should be suitable and is being tested. Rats treated with B-naphthoflavone according to a standard protocol show higher aryl hydrocarbon hydroxylase levels in lung, liver, kidney and trachea than rats treated with Aroclor by the standard procedure. Mutagenicity studies undertaken so far have given inconclusive results. More mutagenicity studies will have to be undertaken before a decision can be made as to the suitability of the B.naphthoflavone treated rat S9 for activating smoke condensate.

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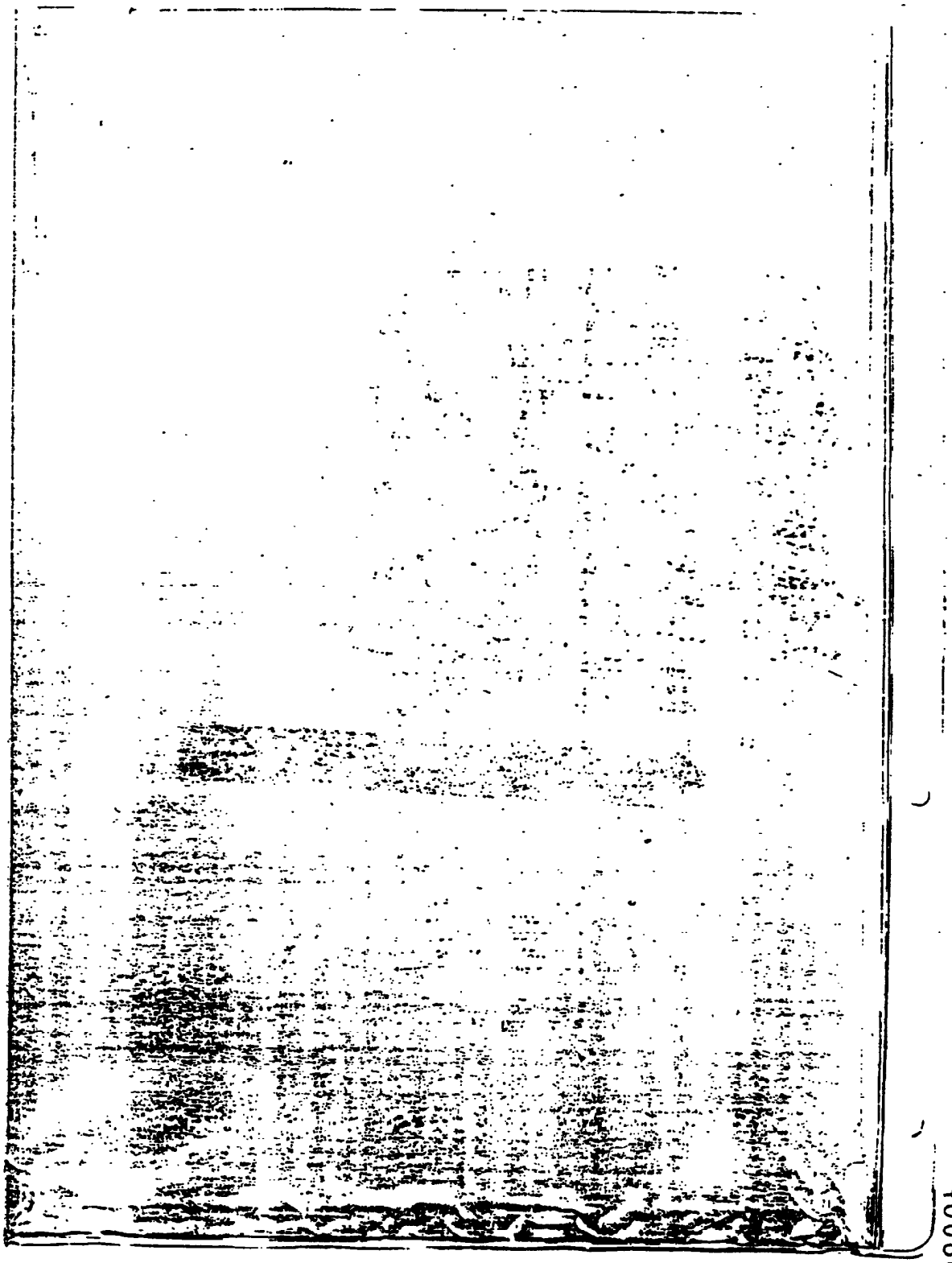

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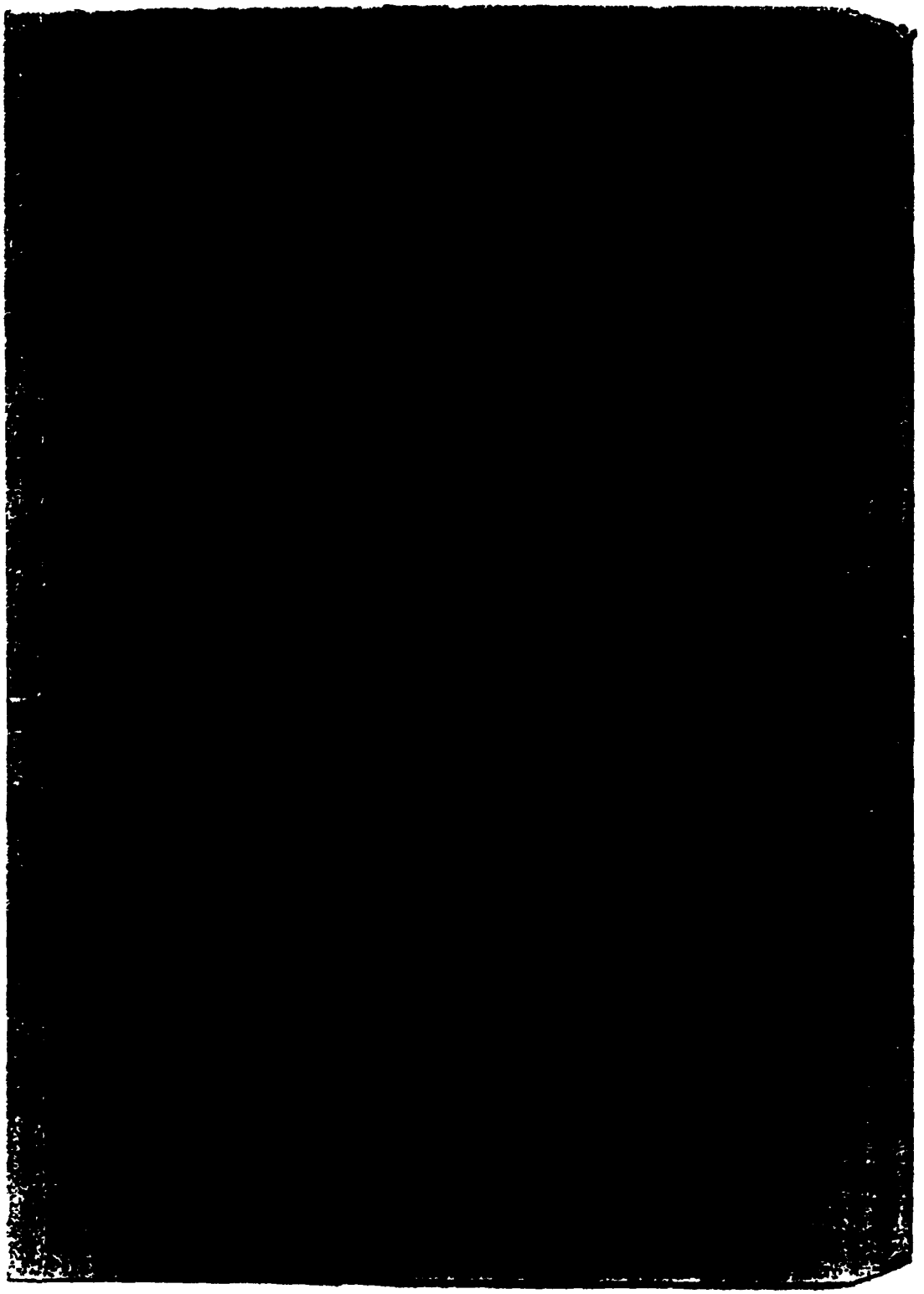

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