TO: DR. C. J. WATSON
DR. L. O. JACOBSEN
DR. R. STONE

[redacted]

May 30, 1944

FROM: DR. S. SCHWARTZ

714385

SUMMARY OF STUDIES

1. Blood and/or urine studies on over 500 project members and medical students have been completed to date. The results are summarized in graphs 1 through 9 below. (See March report for basis of test scores.)

Insert #1 Each individual is classified according to his predominant exposure, though it is clearly realized that other exposures may possibly play a determinate roll in the test score. Chemical exposures especially, are now being analyzed with this in mind.

Plans are under way to further control our data by studying industrial workers off the project with chemical and non-tuballoy metal exposures similar to ours.

Insert #2 2. Preliminary studies of urine tuballoy indicate that the fluorescence technique suggested by Dr. Bloor of Rochester, New York, will permit the estimation of considerably less than 1/10 gamma. This method is based on the fluorescence of tuballoy infused sodium fluoride. Detectable amounts of tuballoy have been found in 2 c.c. aliquots of urine of highly exposed project personnel.

3. White cell phosphorus studies are continuing. A report of these studies is omitted this month pending clarification of certain factors.

Dr. Baron has shown that the cells obtained from the hypotonic solution are injured, as indicated by the lowered respiration rate.

4. A study of radiation effect on five patients with polycythemia is under way in cooperation with Dr. Jacobsen. Two have been treated with total body radiation and three with radioactive phosphorus.

5. (Please hold the following paragraph until okayed by Dr. Hodges)
Following the suggestion of Dr. Hodges of Rochester, New York, urine catalase studies have been initiated on project personnel exposed to metal. ~~with the following results.~~

REPOSITORY NARA-WASH DC
ANL + UN of CHICAGO
COLLECTION MET LAB
BOX No (1) NN3-77-85-1
FOLDER May 1944

CLASSIFICATION CANCELLED
DATE 0 1962
For The Atomic Energy Commission
Robert L. Jackson for the
Chief, Declassification Branch

1090572

NN
9CV-A51270

NDN-A51270 16895

Insert #1

Where repeated studies have been done on the same individual, only the first study is included here in order not to unduly weight the data.

REPOSITORY NARA Wash DC
ANL + Un of Chicago
COLLECTION Met Lab
BOX No. (1) NN-3-77-85-1
FOLDER May, 1944

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Insert #2

[redacted]

From these graphed studies, the following conclusions may be drawn.

1. In general the total score is the most commonly positive index of exposure.

2. Porphyrin metabolism is definitely affected in the metal exposure group, apparently more by lead and mercury than by tuballoy. Exposure to the oxyfluoride, however, caused a 2 to 4 plus elevation in the urine coproporphyrin of of specimens studied from individuals.

3. Serum sulfur appears to be elevated more in the tuballoy exposure group than in the non-tuballoy metal group, i.e. lead, mercury, brass, and tin. However, we have no adequate control series for the higher aged members of the former group as compared to other groups which we have studied.

4 -

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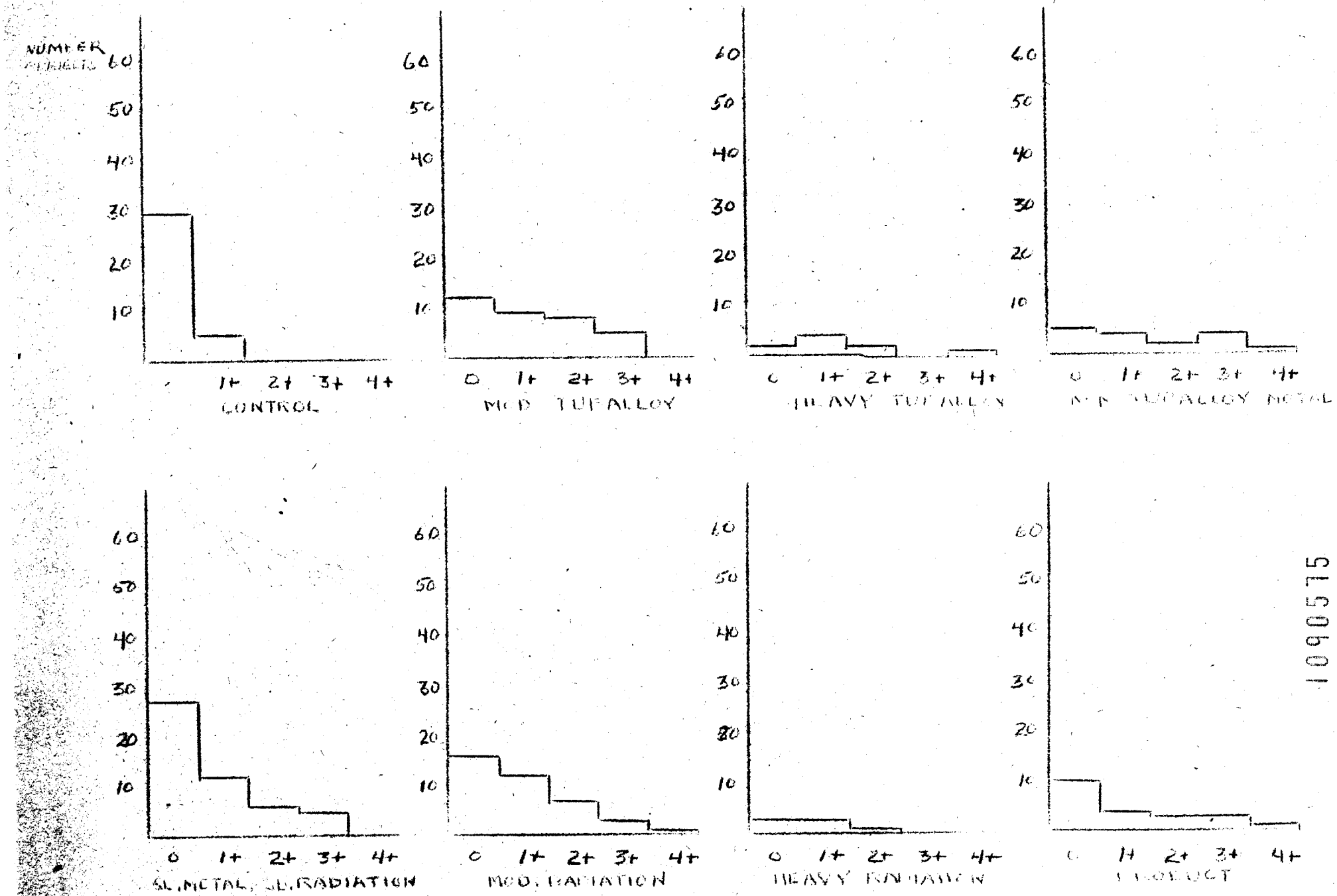

GRAPH 1

AVERAGE SCORE

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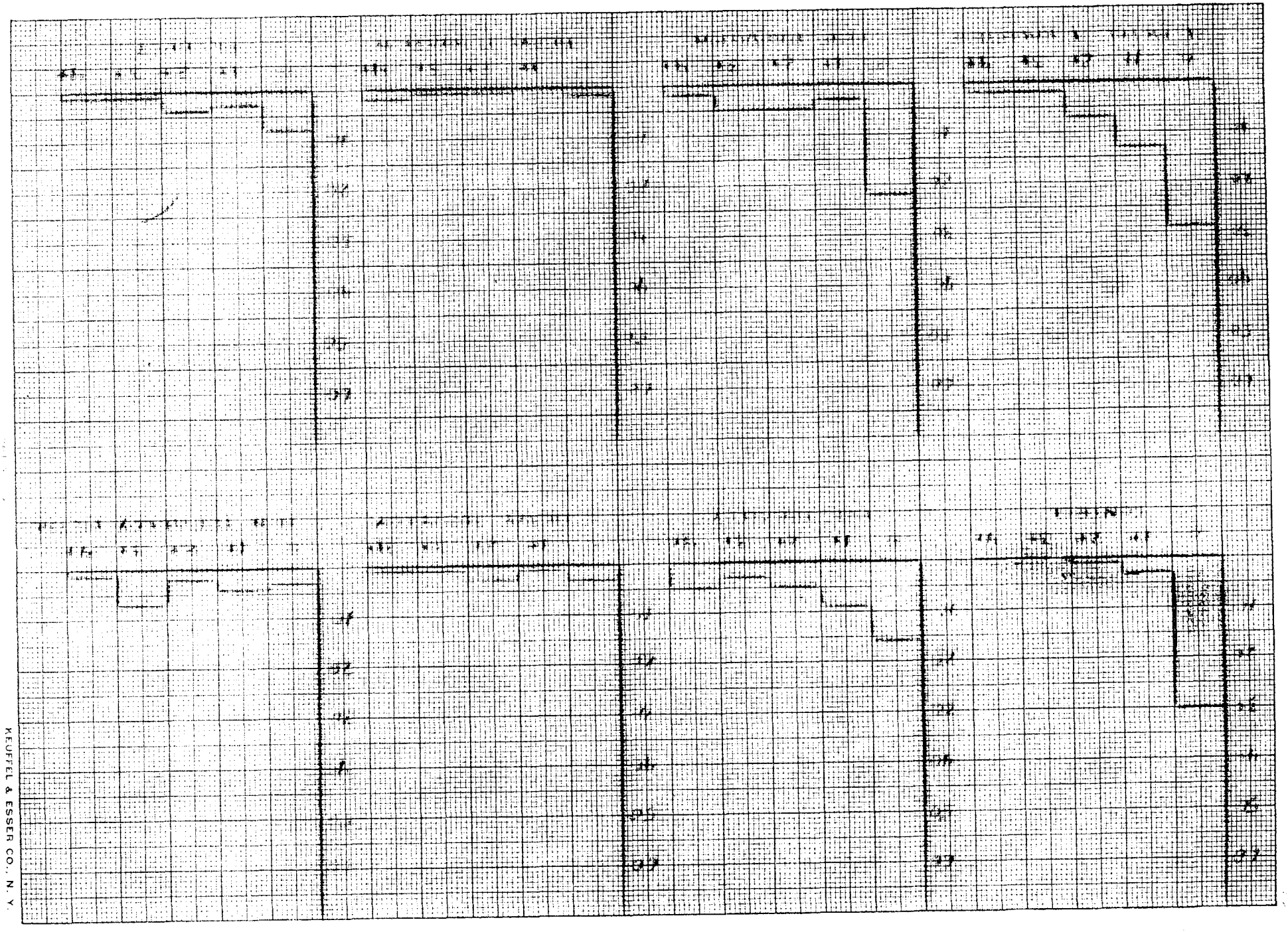
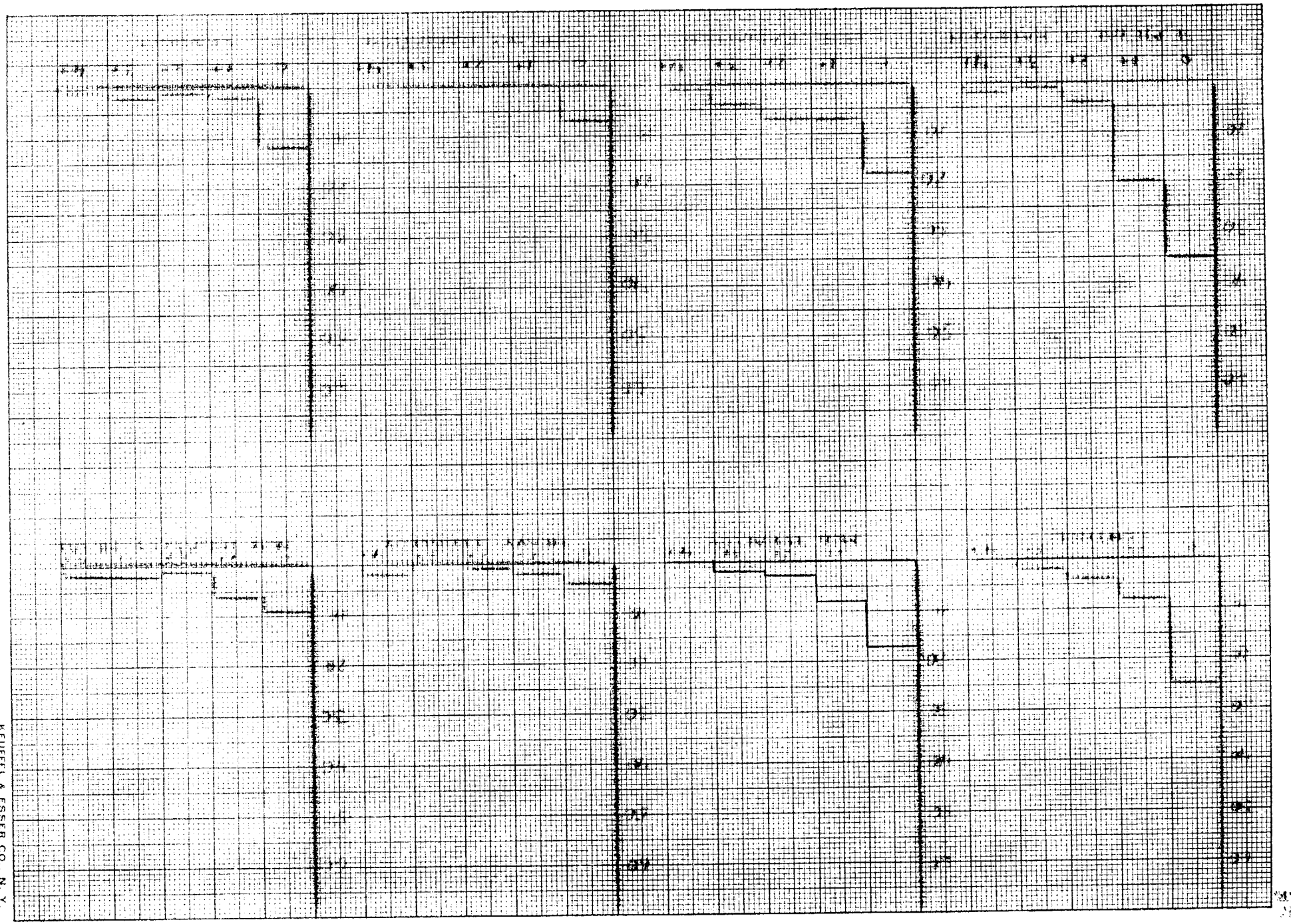


KEUFFEL & ESSER CO., N. Y.

1090576



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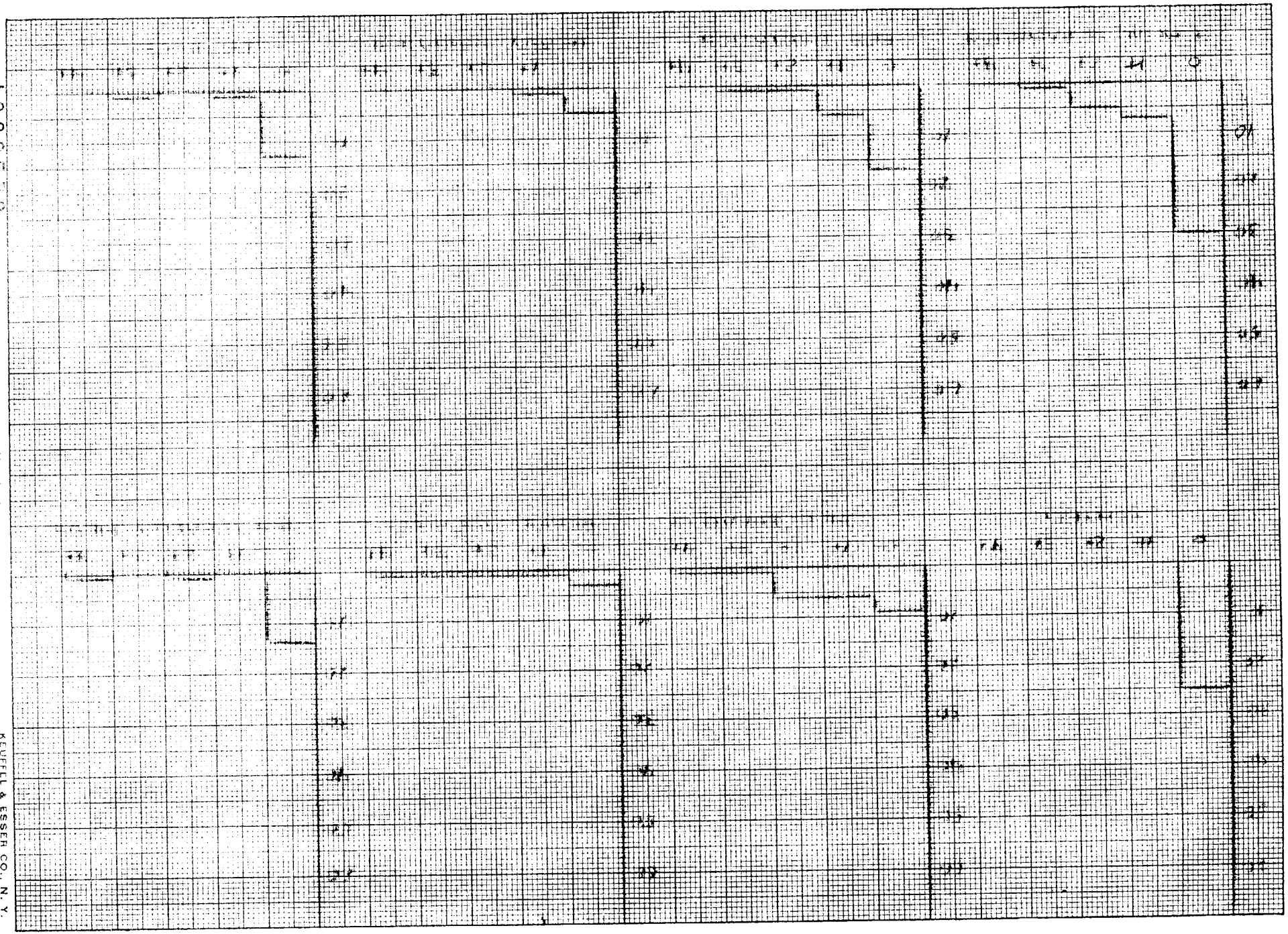

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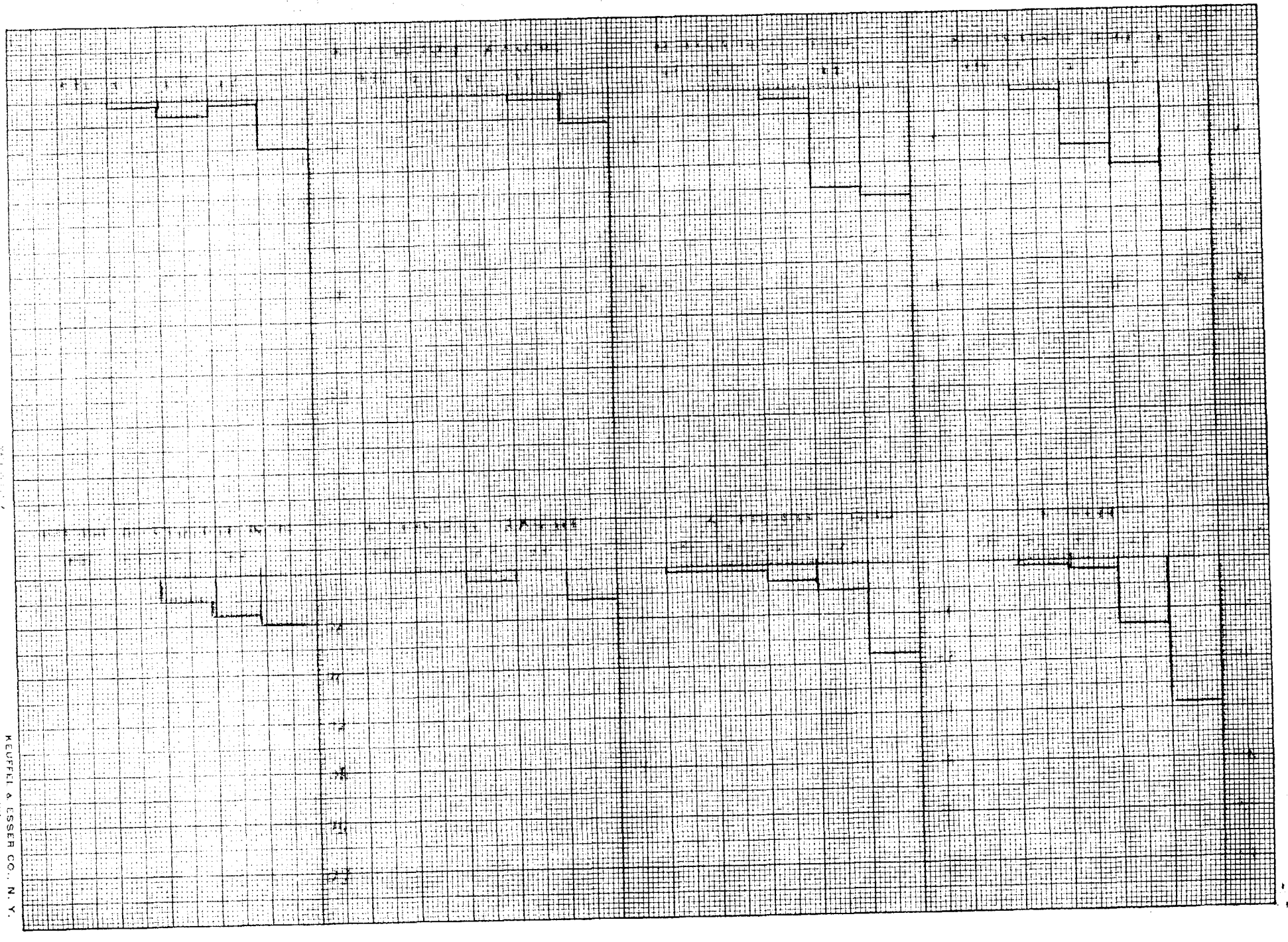

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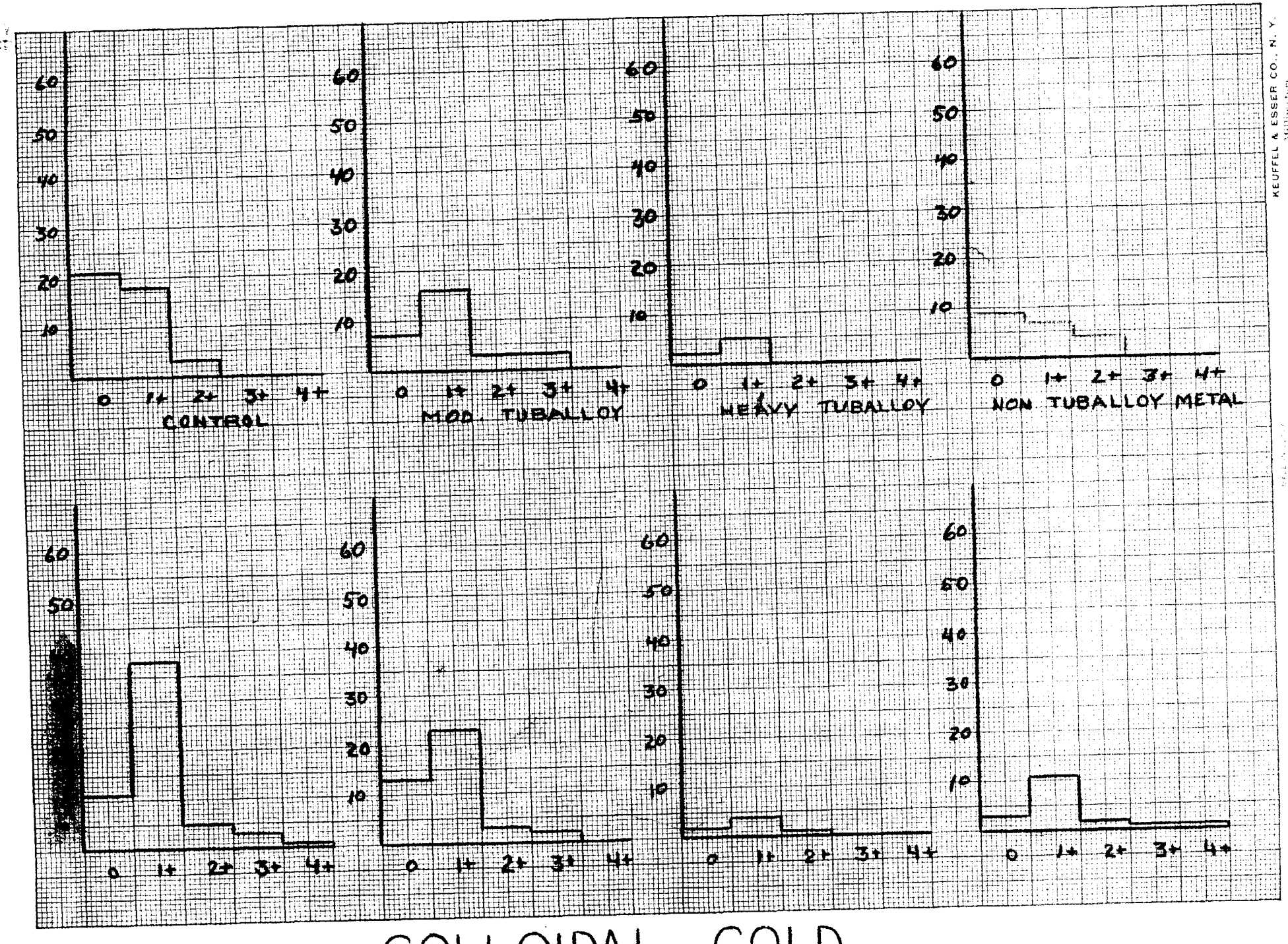

COLLOIDAL GOLD

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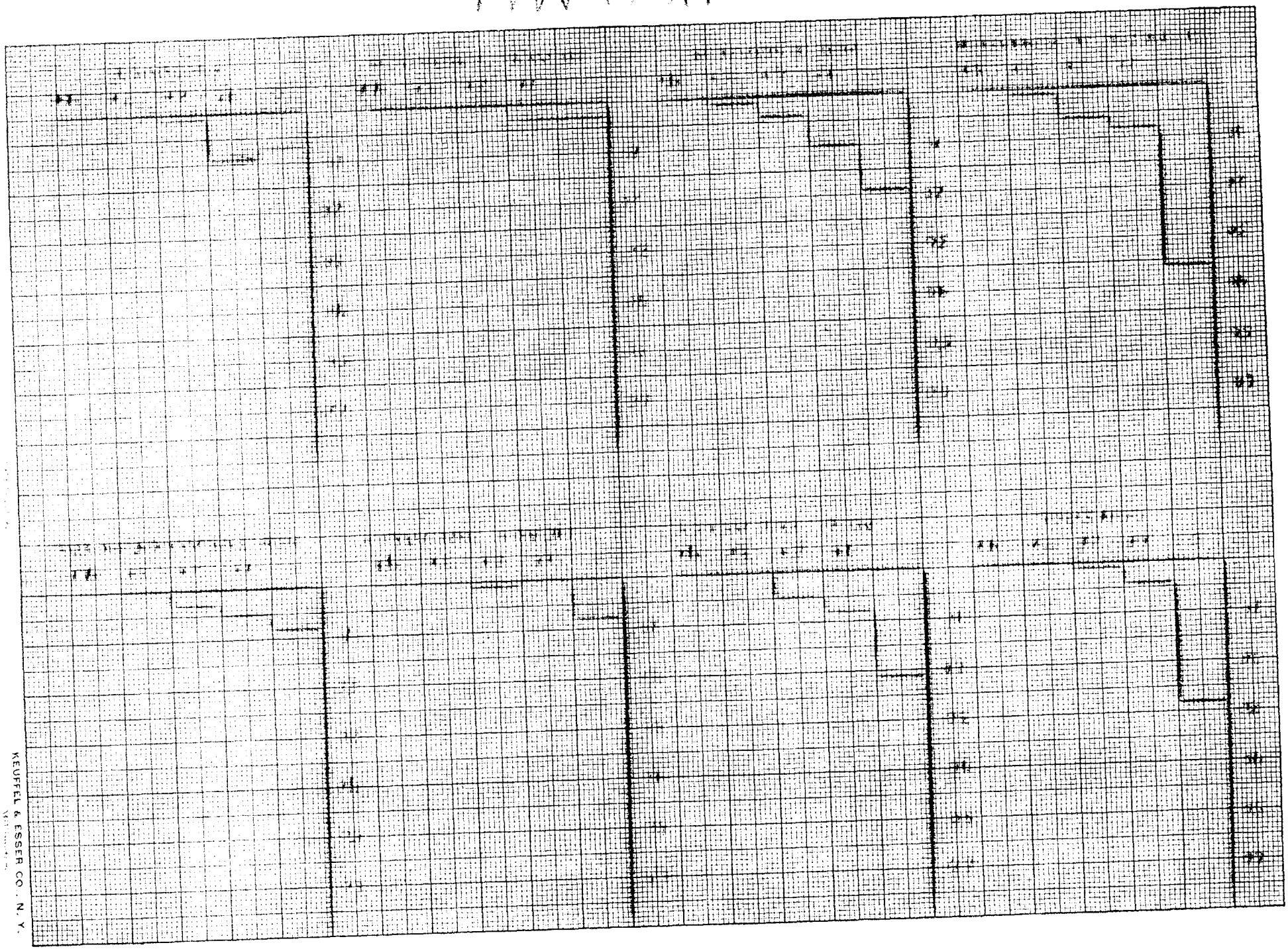

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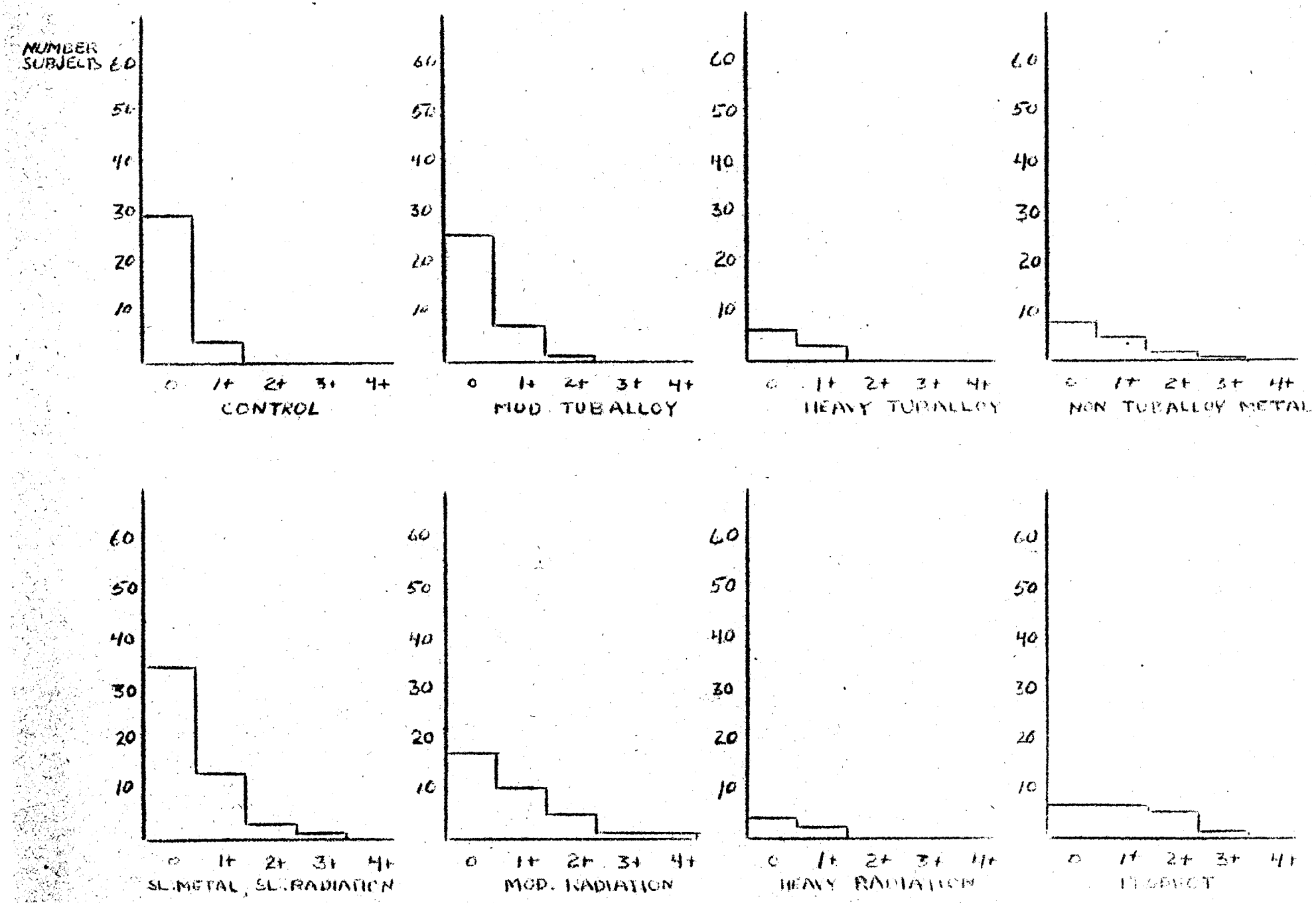

GRAPH 5

520 MU

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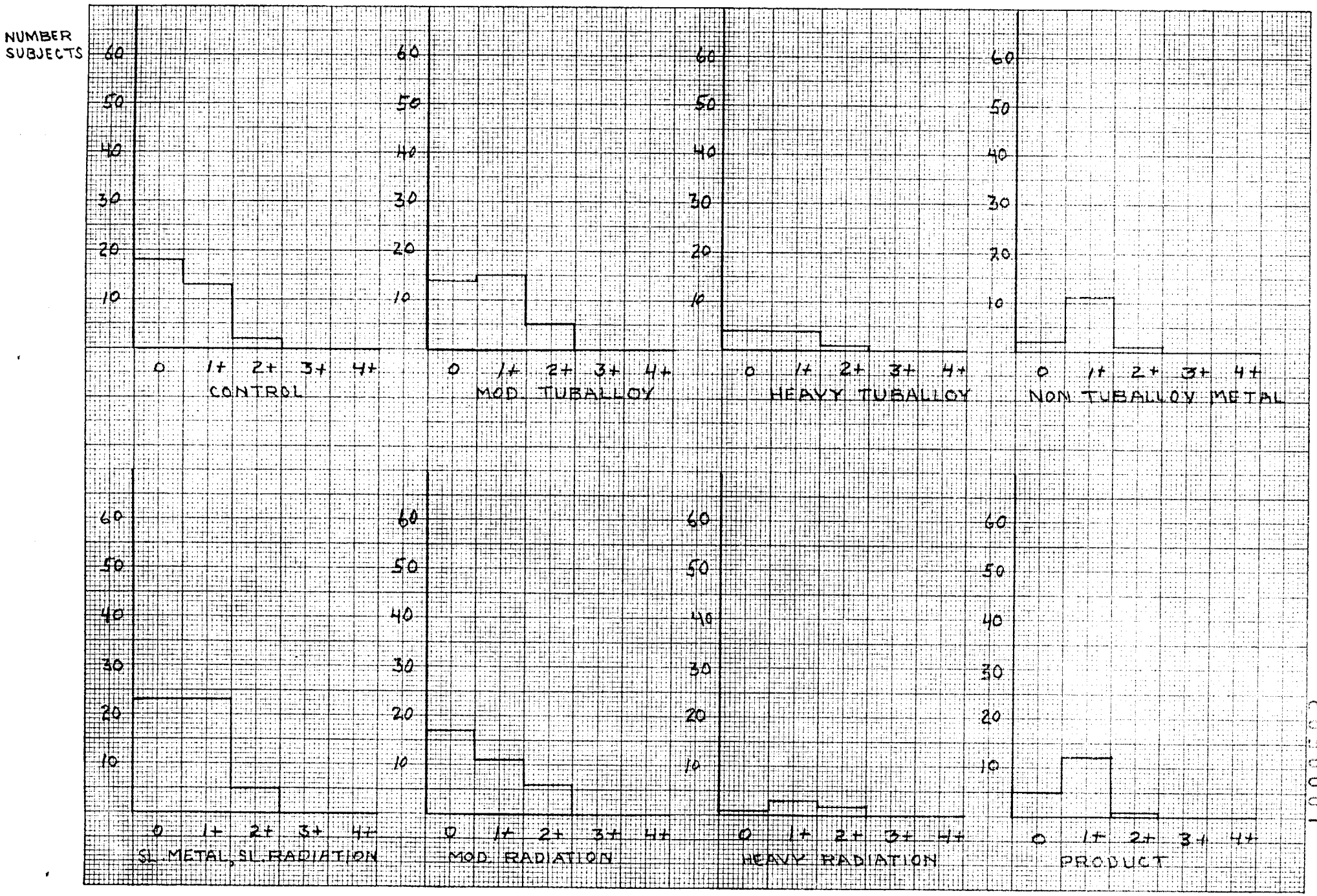

GRAPH 9a

543 MU

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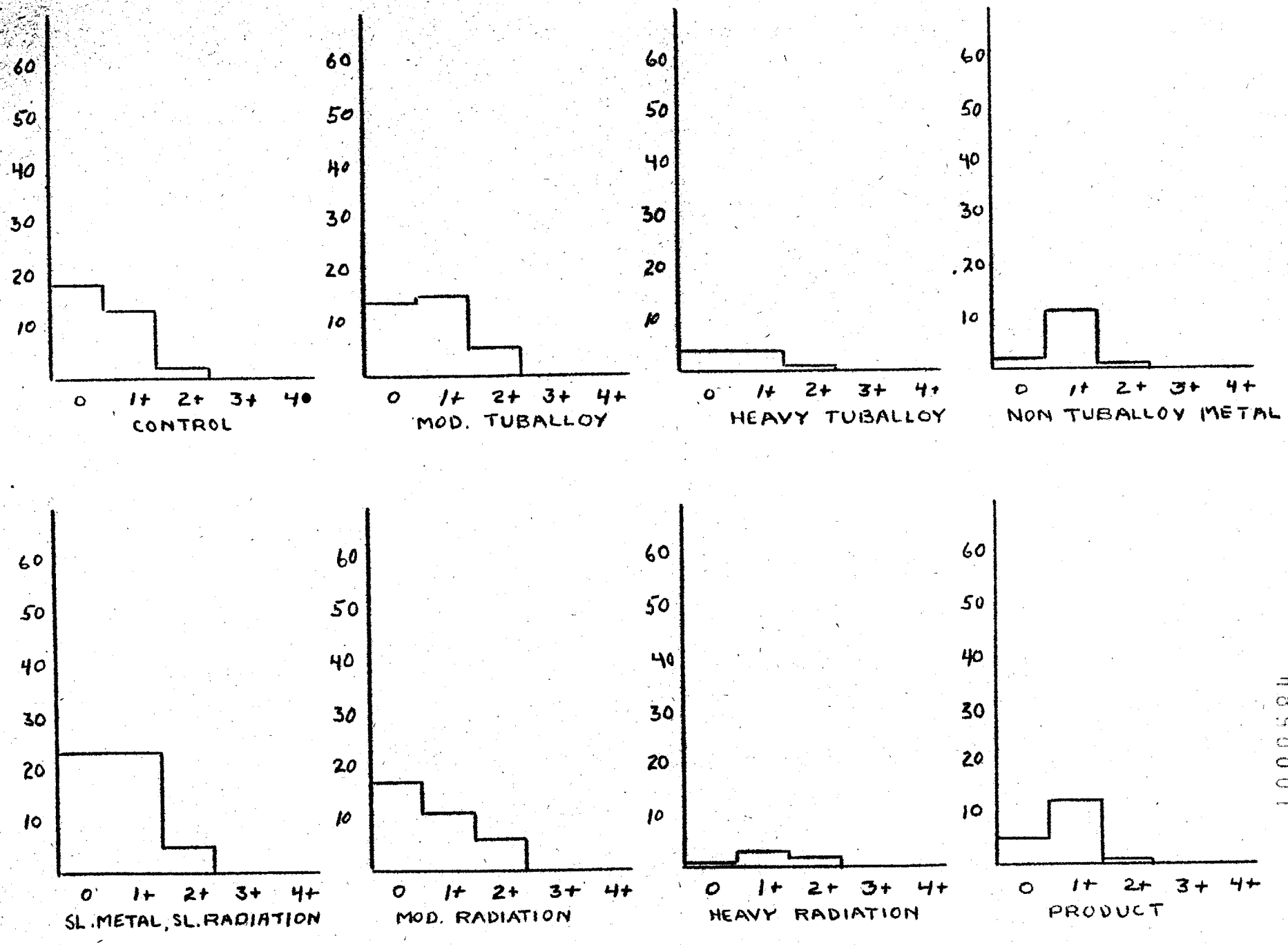

GRAPH 9a

543 MU

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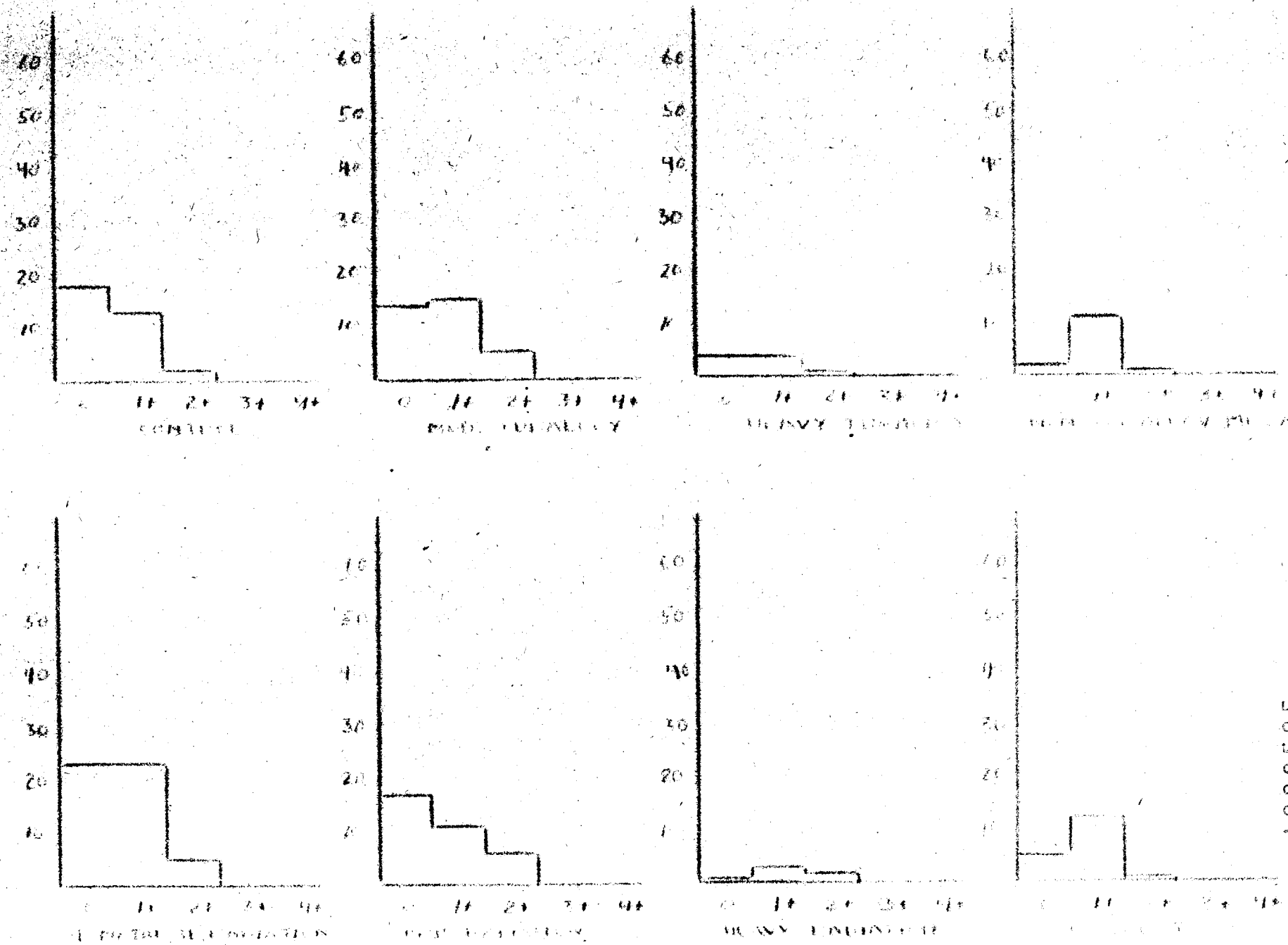

GRAPH 46

543 MM

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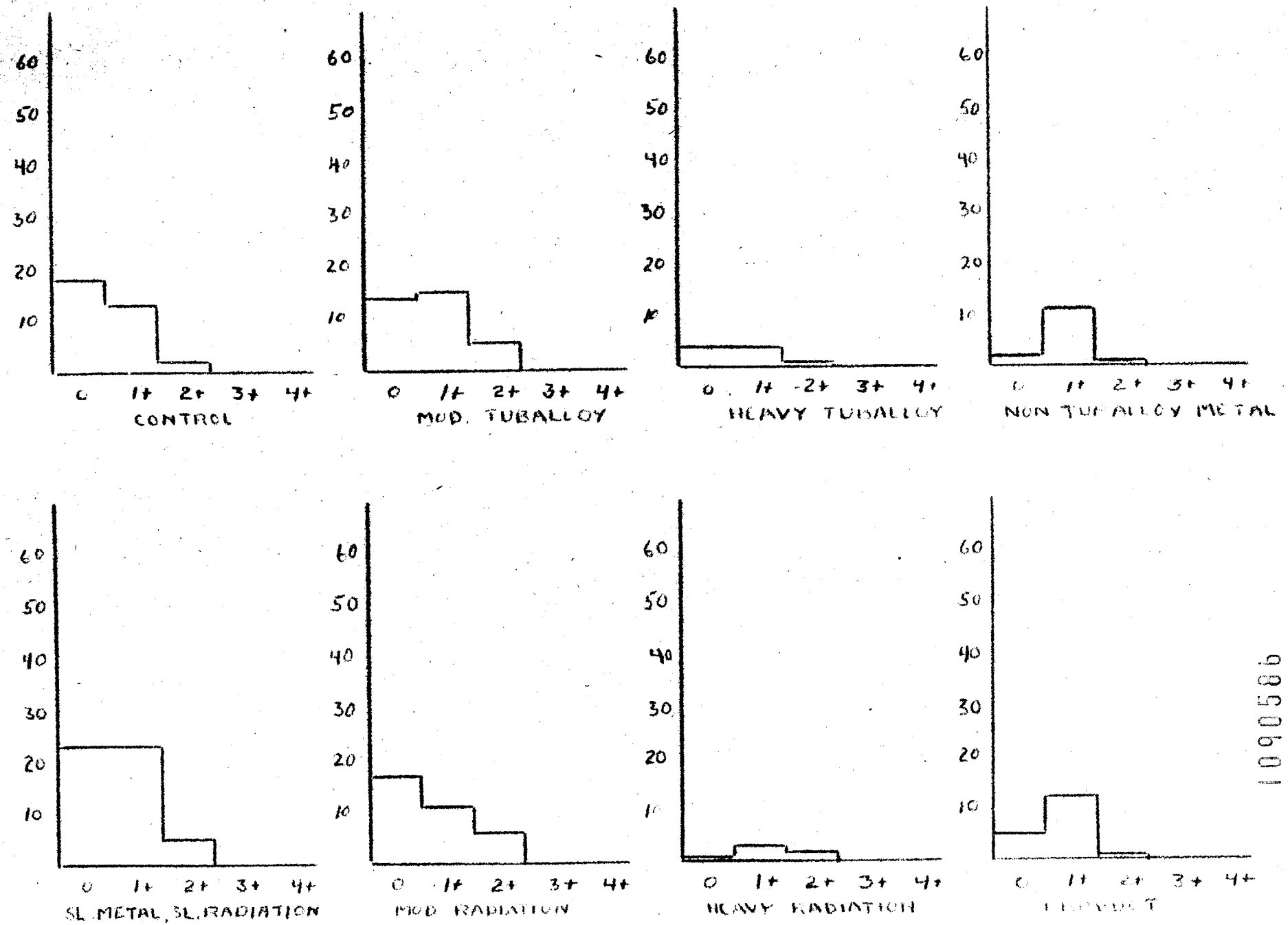

GRAPH 9a

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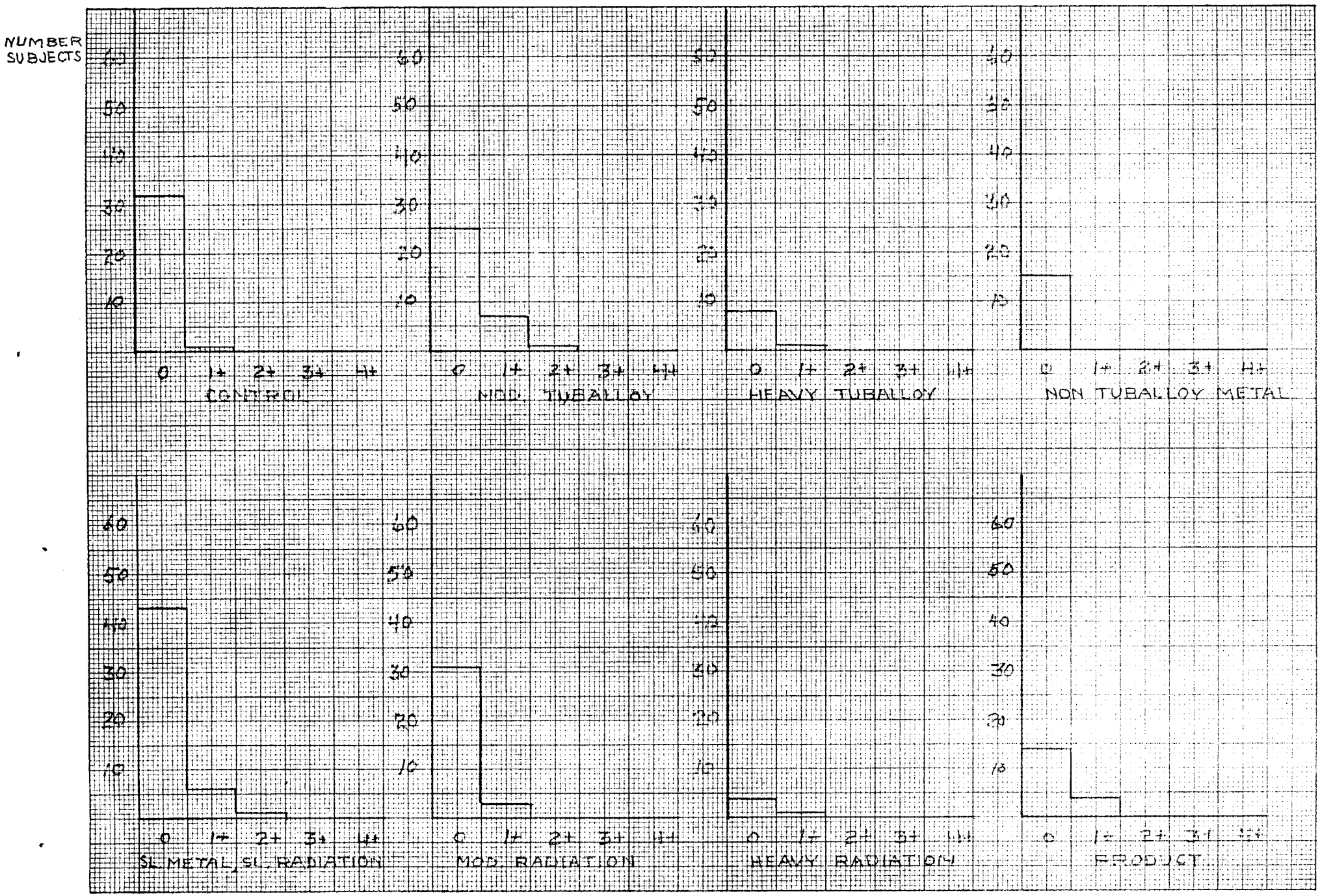

GRAPH 9 b

510 MM

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MADE IN U.S.A.

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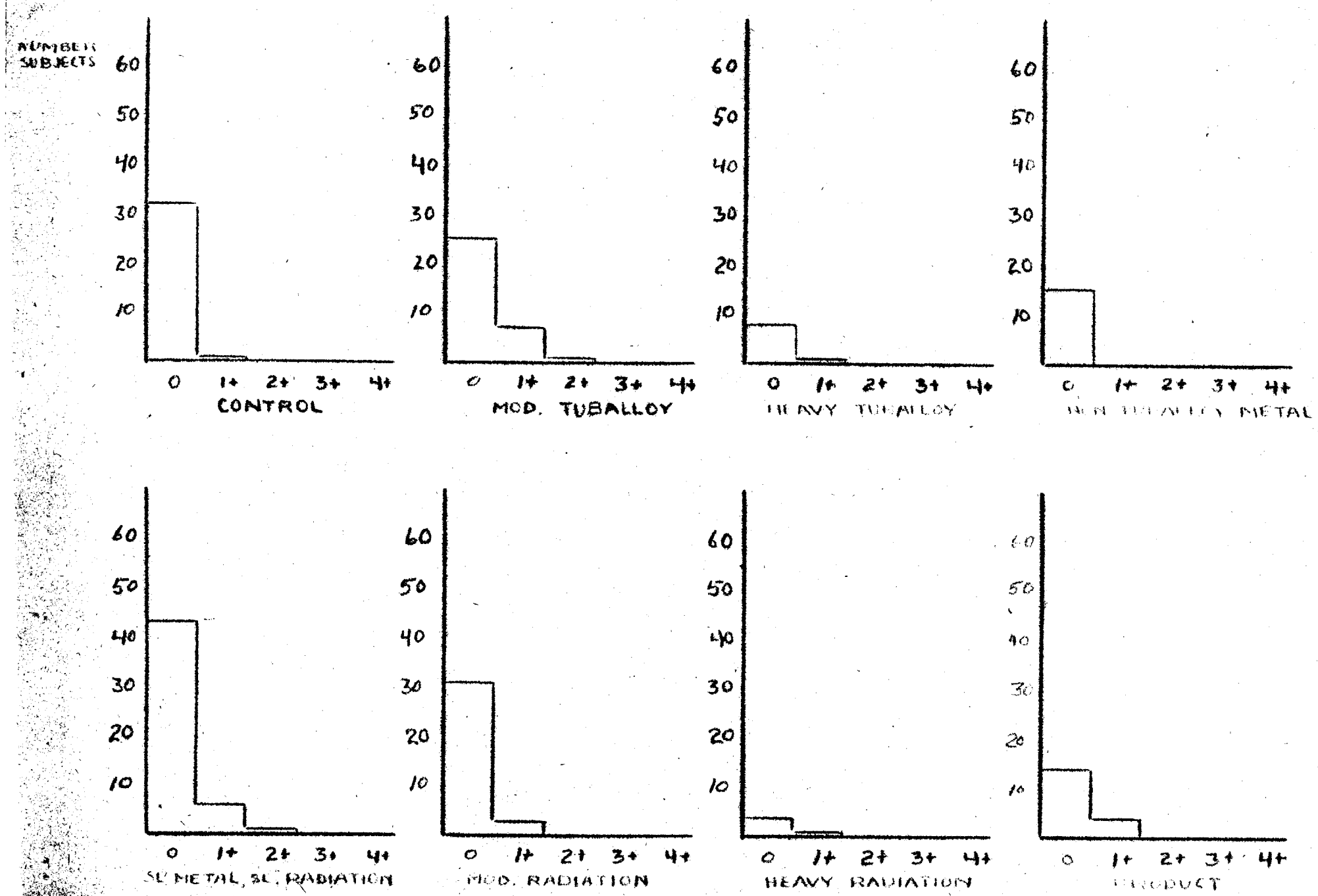

GRAPH 9 b

510 MU

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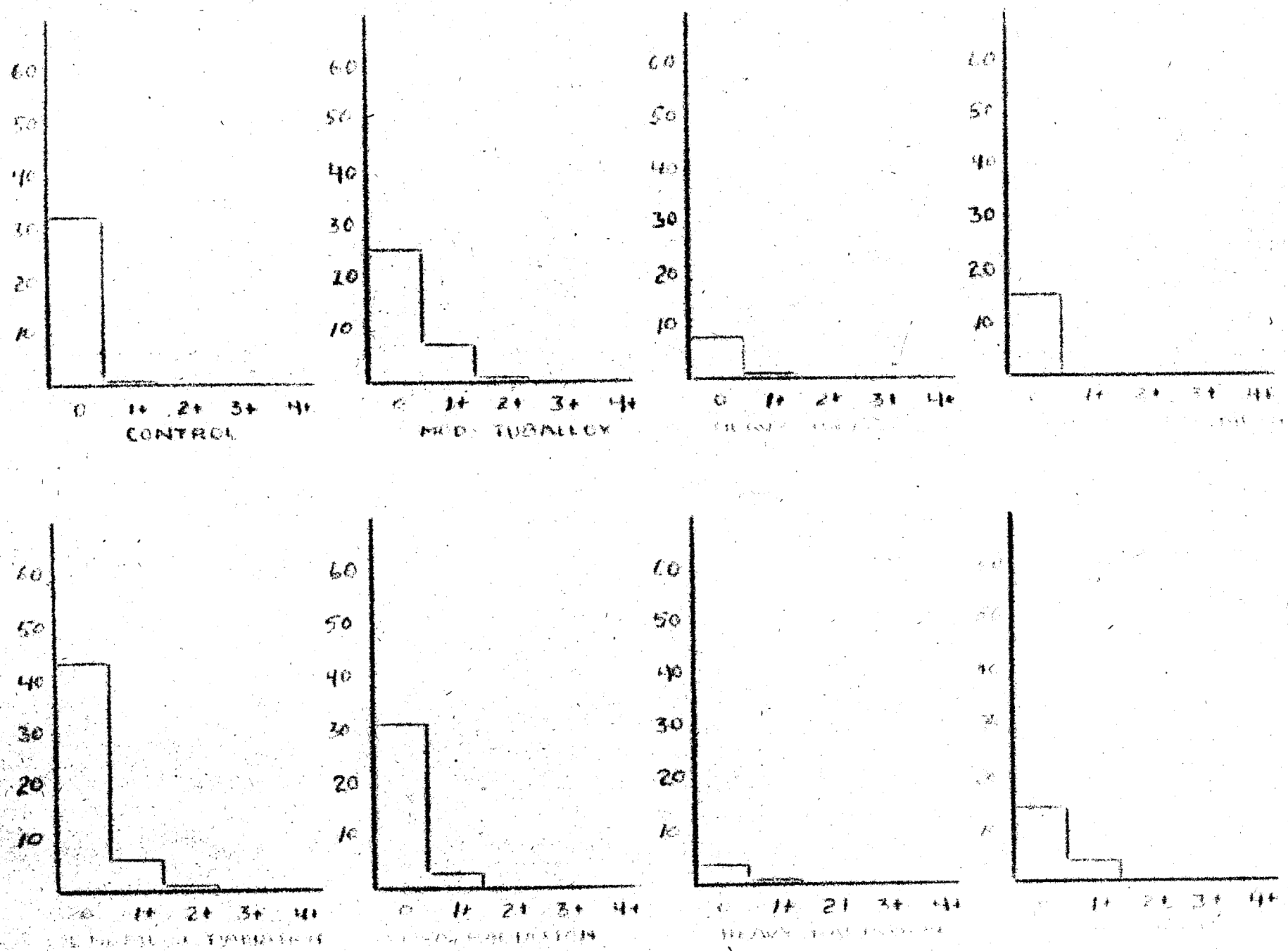

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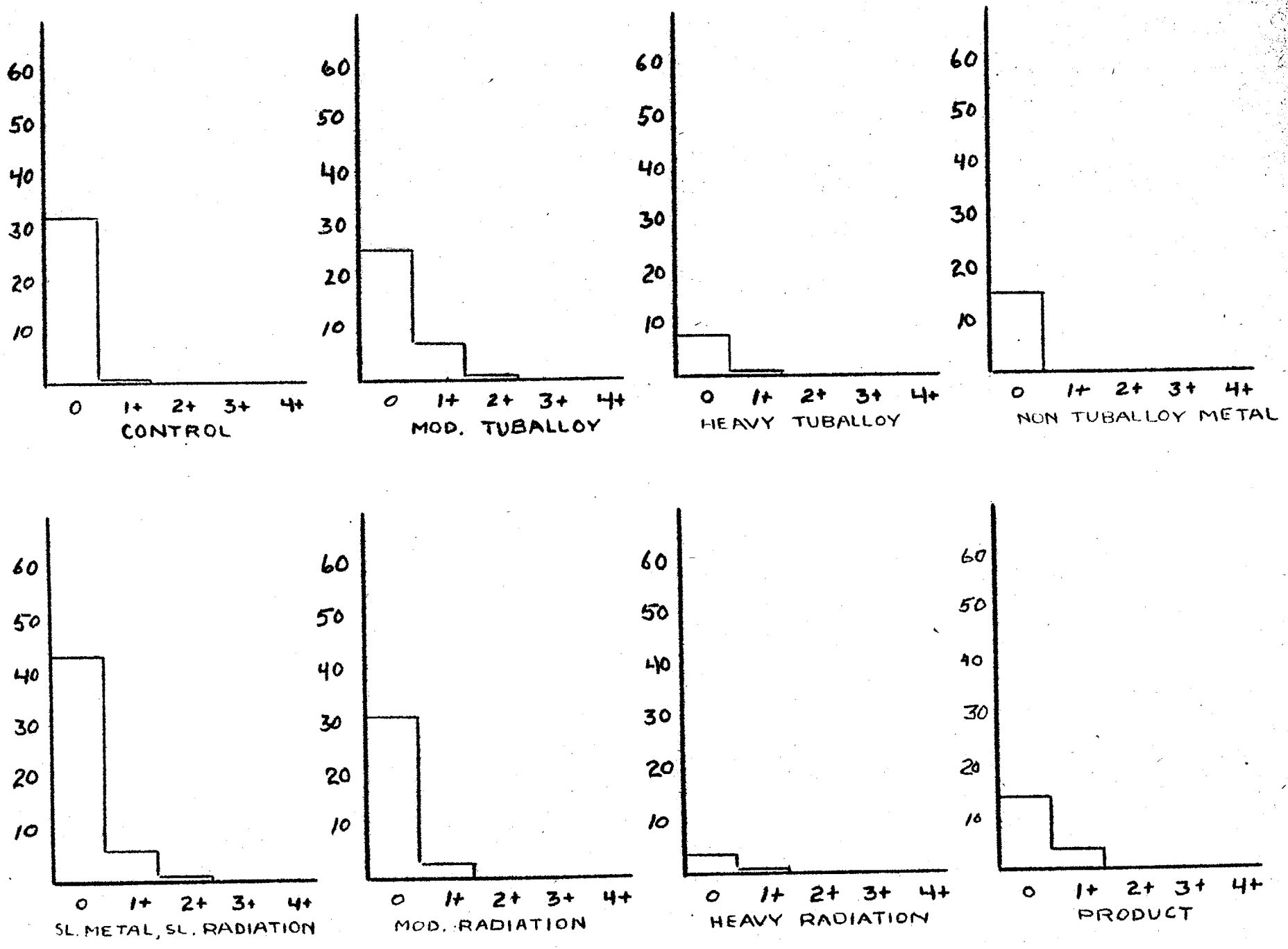

GRAPH 9 b

510 MM

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