

LBL 187  
 Pat Surbin Prepared 5/17/72

1. SUBJECT TITLE Metabolism and Toxicity of Transuranium Elements and Other Radioactive Bone-Seekers	2. DATE 1 May 1972 JBI DUR
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## DESCRIPTION OF PROJECT AND WORK PLANNED (CONTINUED)

not complete; (c) Extracellular fluid is an important component of the transport of both bound and free Pu; (d) The kidney excretes only unbound Pu; (e) The liver takes up aggregated or unbound Pu, but appears not to accumulate protein-bound Pu; (f) Bone takes up unbound Pu (as it does other multicharged cations), and in addition a mechanism is present in bone, which we believe to lie in the red marrow, that permits bone to accumulate Pu from the protein-bound pool. These findings are presented in Ref. 3.

239-Plutonium in Man

The review of the data from the 18 persons who were injected with 239-Pu in 1945-46 was completed and published in Ref. 1 and 2. A follow-up was started to learn (a) the identities of the individuals, (b) their subsequent medical histories, and (c) the place and time of death. The aim was eventually to obtain two valuable kinds of material -- biological specimens from those that might still be living and a complete skeleton from which the internal distribution in the human skeleton could be determined.

The three California cases were completely traced. Two are dead; hospital and death records are on file. As of 1968 one was still living and his last known address is on file; hospital records are on file.

Eleven Rochester cases were traced. Seven are known dead, and one presumed dead (he was very ill with a long-standing heart condition and was transferred to a veteran's home), and three were still living as of December 1971. All hospital records are on file, and two death certificates are on file.

The Tennessee case was identified. His status as an employee of a local Oak Ridge contractor was established. His last known whereabouts was Atlanta, Ga. as of 1947. Because of his age and illnesses, he is presumed dead. Hospital records are known to have been destroyed.

General

Completion of the review article begun last FY on the metabolism and toxicity of the transplutonium elements (Ref. 6) was postponed in order to take advantage of the 1971 Transuranium Symposium at Richland. That symposium nearly doubled the total amount of published information about these elements. Preprints of all pertinent

PROVENANCE

REPOSITORY: OFFICE OF HUMAN RADIATION  
EXPERIMENTS (OHRE)

COLLECTION: PLUTONIUM INJECTION INVESTIGATION  
FILES (OHRE 1)

BOX: 2

FOLDER: EXTRA COPIES FROM ROCHESTER FILES

1145714 A

Pat Durbin LBL 189  
Prepared 5/17/72

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Metabolism and Toxicity of Transuranium Elements and Other Radioactive Bone-Seekers	1 May 1972 #B1

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Helen E. Gen. et al.

Pat. Dublin - 4-17-74

ICI

Pat started working in 46.

Josephine Crowley worked at Scott & Hamilton  
excretion samples in Santa Rosa.

Loty raised questions to Pat to see if Am. to Rocky Flats  
in UNES series, each group wrote up their own stuff.

Different groups planned to publish but not all made it.

Pat assumed sampling to terminated at 170 days.

Path. Record in Chi-2 says that patient was  
injected with something that would have  
helped her bone metastases didn't do any good.

Pat & George never looked at hospital records.

They went to path dept & looked at autopsy reports.

Aug. 25  
Brunner in 69. Pat wrote to him.

Sept. 13  
Loty in 68. " " " "

patient records disappeared for most part

He was a minor and died of metastases.

Was in Chinese Hospital all time

June 9, 1947. Examined by Ogden

June 10, 1947. Injected <sup>IM</sup> at Chinese Hosp

3500 counts/sec. - 2  $\mu$ c injected

Leg amputated 2 days later.

Body burden of Am in 1955 .06  $\mu$ c.

Now .05  $\mu$ c.

Att. Physician for Chi-1 was plastic surgeon.

BEST COPY AVAILABLE

Pat Darwin 2

was ~~the~~ <sup>probably</sup> ~~private~~  
was private

Chinese boy was private

Chi 3 injected same day as Chi 2. Pat thinks must have been also at Chi.

Chi. 2 injected at 9:02 AM in C43607,  
Legible in OR copy.

Results didn't agree for first 3. So, went to  
more data, <sup>probably</sup> by getting more people injected.

Payne Harris & Bob Carter could answer questions about delay in publishing.

Langham said that there was a flap about the study of Pae patients & threats about rolling leads.

HP-12 was not an employee but drove truck for contractor.

Joe Howland said that he was injected HP-12 & Friedell standing over him.

Pat was interested in:

1. Physiology
2. Still living?
3. Skeleton <sup>to</sup> availability.

Pat corresponded with Waterhouse, said that it might harm patients to tell them.

Cal 3 had physician named A.O. Dikes.

Hamilton, Low-Beer as attending physician

Get a copy of Handbook Exp Pharm. XXXVI  
Uranium, Plutonium, Transplutonic  
Part 3 Elements.

injected patients probably. Scott probably, was  
not present.

Hamilton was only one with contacts to hospitals

Child in SF got 3 solutions - Ce, Y, Pu. Must have  
been substantial consultation with Mother.

Hamilton was cautious.

May have been deal to Allen and Jorg about <sup>case</sup> ~~the~~  
in return for study.

Conversation with Dawson at 4:30 PM 4-18-74  
on phone.

Earl Miller name on following:

1. Scott's notebooks

Sheet 3 solutions

May 3, 1946 - Blue dept stationary

press spec. 2.5 pgs sample.

Unsigned Miller

2. Ce IV.

Pu 239 IV.

Y IV.

Group of 100 samples.

adapt. memo.

3. Oct. 36 '45.

Time - Earl Miller

Conversation with Ken Scott

4-18-74

3pm

IC2

Residualing

Exp. Multi.

298

Info Division of Rad. Lab. on bill.

MOOC-1275 Russian products

War Cooksey

Josephine Crowley - limit approach

June, 1960 Health Physics

ICRP Committee #11 on Permissible Dose for Int. Rad.

Good bibliography

Stephens

~~Attorney~~ probably didn't know anything

1145720

Garry allen  
Miozza & marks

4-19-74

9AM

IC6

Schwartz, Bruce, Cecil Watson

July 23, 1944. Went into Met. Lab.

Deceased. Until July 1, 1946.

Person in authority was Austin Bruce.

allen → Jake → Stone

Garry and Jake were only ones with concurrent appointments in ~~the~~ medical & metlab.

Interview with Mary Margaret Shanahan I C 7  
and Robley Evans of in Southwest Field Station  
in Phoenix at 3PM on 4-22-74

E.C. in Ref. 15 was

Jan Zieber - Home  
Delayed Effects  
C.M.O. of FMC, Amer. Viscose.  
Harry H. Beecher - Experimentation in Man  
1964. C.C. Thomas

Ladimer, J. & R.W. Newman, eds - Clinical  
Investigation in Man, paper, Boston U. Press

Thursday -  
9 A.M. P. Radu  
Dir of Radiology & Rad Biology

IC8

Conversation with Staf Warren - 4-22-74 9:15 AM.

Hempelmann & Langham, Harry Whipple

Big meeting

Staf CMO under Jones

Friedell in OR

only one who knew about Holloman

James Knowland

Gieberry & Stone against it.

No need for authorization

Leisure World

George Kaplan & Ned Bryan

~~Real Beach~~

Dowdy deputy to Staf in dept.

Kalkreider & Keutman

1939 & 1940

UCLA Feb. 1, 1947

acting director for 6-7 months.

No decisional meetings.

Earl Miller peripheral at S.P.

O.R. - Jim Turner chief of Y12.

Bill McAnn's 2nd wife - adm. asst. in dept.

Dr. Tink



PRIVACY ACT MATERIAL REMOVED

J. J. Nickerson - 4-23-74  
in Memphis 3 P.M.

IC9

3<sup>rd</sup> - Hodgkin's disease -

Head of surg. Path. at U of C. } May have Hodgkin's case  
in files.  
Don't know who might have talked to patients.  
Nickerson handled isotope end.

May-Johnson bill



PRIVACY ACT MATERIAL REMOVED

Jan Lieber in Philadelphia 4-24-74  
10 A.M.

IC 10

Sister -

For 12 years. Has done this work

April, 1973.

Injections of radioactive materials <sup>as an</sup> experimental  
treatment. <sub>IA</sub>

Not to mention P.I.

Has contacted all or almost all.

Daigneault - brother -

1145725

W

Interview E Freedell 4-25-74  
at Case Western Reserve 9AM.

IC II

May, 1946

6 mos. as deputy.

Contractor responsibility

X 10 Pm project

49 was term for Pm.

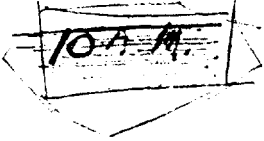
Volunteered for active duty.

Warren Chief

Dwight Clark

Charlie Rea

1145726



PRIVACY ACT MATERIAL REMOVED

- 3208 Liverman

I C 12

522-3131

Protocol for human experiments at Rochester.  
Holding & Howland in Oak Ridge

George Teroy - 4-25-75

Teroy

Student's note

med student

Family is anxious for patient to be started on <sup>phenytoin</sup> treatment (experimental)

U medicine was initiated.



Discussion Ed. Bale 4-30-74  
11 A.M.

IC 13

Po - test important to war effort. Potentially hazardous in large doses but that the amounts were not believed to be hazardous. This would be important to war effort. Chose only people who were interested in cooperating.

AEC Monthly Progress Report

Helen Van Alstine at Vassar.

Feb. 1947 - Names in metabolism unit <sup>Uranium</sup> studies

Tracer Chem - Albert Brenkel, Dorraine Zeake, Helen Van Alstine, Nat Cedars.

<sup>12 group</sup>  
~~Bill~~ Neumann, of Div. of Pharm. and Toxicol. cooperated in U studies.

Note on followup of two patients in June 1947

May 1947 - Note on follow-up.

Bill Bale's file on people in group - <sup>metabolism</sup>

IC 14

Sam Barnett left 7-1-50 to go to Knoxville, T. N.

Helen E. Van Alstine - 8-29-47 terminated for another

Old lady in Switzerland  
Walther, Johanna

Spec. duty nurse

Virginia White

Hired

Spec. duty nurse

Kay Cusson

Hired

Asst. Chief Tech.

until

Doris Taylor Spec. duty nurse

Metabolism

- until

Geneva Horvath

technician

until

term



Louise Hempelmann  
Interview - Marks & Mizga

5-1-74

IC 15

Jim Knowland  
Hirschfelder  
Herschberger and M-<sup>CS</sup> ~~Lee~~  
Miedell went to W.A. <sup>Joe</sup> twice  
Maf suggested metabolism ward here.

HP-

Interview with Dr. Helen Van Alstine by Marks and Miazga  
on at 3:15 PM, 5-2-74 at Vassar College, Poughkeepsie, N.Y.

Recollections later that evening.

1. Attended patients as Dr. Bassett's <sup>clinical</sup> asst. Did <sup>not</sup> ~~help~~ work for him but did not participate in selection of patients, <sup>to metabolism ward</sup> was never present when he discussed reasons for transfer, ~~ward~~ <sup>ward</sup> with patients, was never present during injection, didn't know what was given to patients.
2. Did know that radioactive isotopes were used in studies, but didn't know which ones they were.
3. ~~Hard~~ <sup>and remainder</sup> of operation was conducted on a need-to-know basis.
4. Complained of complexity of handling specimens because of elaborate security precautions.
5. Described Bassett as shy, withdrawn, untalkative man.
6. Left Rochester in 1947 to go to Vassar. Blotted <sup>and AEC</sup> MFD project out of mind at that time. Has not thought ~~of~~ about it since.
7. Did not remember specific correspondence when shown it nor cases histories.
8. Cases seemed to be different from others on ward only in so far as they required shipment of specimens to Los Alamos.
9. Only other possibility that she could suggest was Dr. Kletman, who died recently. He had only a small connection with the unit, however.
10. Injected one case of ~~unknown~~ without knowing what may have been another isotope. [REDACTED]

Lonnie Kumpelmann - Retrospective notes  
written on 5-2-74

IC 17

1. Staff wanted work done chiefly at Rochester because he said there was a good metabolic ward. When Lonnie visited, he found very little there - a small 2 bed ~~unit~~ unit.
2. There was a big need for studies - ~~highlight~~ <sup>caused principally</sup> by a big increase in volume ~~sent~~ produced at Hanford and sent to Los Alamos for ~~receptor~~ work. The major ~~in~~ increase occurred about March 1945.
3. Lonnie remembered two visits by Friedell to Los Alamos. He had picked up Friedell. Also, remembered visiting E Friedell and Staff Warren. Didn't remember specific discussion of tracer program at March 23(?) meeting but didn't rule out - sort of no comment.
4. Has heavily involved in Trinity, shot at Alamogordo ~~from about~~ after June 1945 on ~~ward~~ until August. Then, makeshift building for Pu work was abandoned & better facility used.
5. Involved E Langham in fall 1944 when challenged by Langham at meeting. Subsequently entered into discussions that eventuated in taking on Langham & turning most of work over to him.
6. Little knowledge of ~~why~~ people started study conditions preceding initial injections in ~~the~~ April 1945.
7. Not much knowledge of detailed Rochester plan.

2nd chart showed  
George Teray said nothing relevant to I.C.B.  
Conversation c George Teray issue of disclosure.  
on 5-3-74

Andy Stehney - April 15, 1974

IC19

Patient from Texas did not sign consent form because  
of unusual way of coming under study.

Lymphoma at Met Lab. from fall, 1943 to mid 1944.

FMC Corp. in Philadelphia - Jan Zieber.

Dec. 72 - Pat

Pat contacted Waterhouse before 73. Said that Waterhouse  
felt that disclosure ~~was~~ would be harmful to old patients.

Funding? Daily costs of hospitalization.

Pre demonstrated in Jan or Feb. of 1974 on Texas man.

Planned to disclose later to this man.

Looking for some <sup>residual</sup> radioactivity from treatment  
given to person years back.

Austin Bruce

4-15-74

I C 20

Health Div. - Bot Stone

Zean Jacobson, Deputy

A. Biology - A. Bruce

B. Clinical medicine - Zean Jacobson

Edna Marks - Technician in hematology

J. B. Allen - Stanford U. Med. School now

Might know something

Sam Schwartz - U. Minnesota Med. School P

Was in research at time <sup>Medic</sup> porphyrin metabolism

3<sup>rd</sup> Chi. patient lost to followup.

C. Medical & Industrial Hazards.

Tickson - head

(1) Russell - analysis & chem.

(2) Loe - health physicist

In Dec. 1947 - Herman Liles was appointed head of med. division

Took over records from Tickson & Jacobson

Dept of Anatomy, Harvard, dean of students.

Hurssen, Grice, Joe Howland was Capt or 1<sup>st</sup> Lt. in contact with Bruce

would know...

In July 1, 1971, <sup>Austin</sup> came to RER.

Dr. D. H. Roberts - Milford, Texas

1145735

Discussion - Rowland - 4-15-74

1. Schwartz - physician may have been involved in UC activities.
2. Nothing from early period.
3. Jan Lieben  
Evans S. Danahan

Instructions family on  
 family told on unknown mixture of radioactive isotopes  
 of <sup>90</sup>Yttrium  
 was given. Purpose was to follow up on study  
~~what~~ what was given and what effects were.

4. Instructions to MMS to get information.
5. Information MMS about Jan's knowledge.
6. CHR → M.D. → patient → CHR
7. Letter will go to physician.
8. Rx of osteosarcoma.
9. Waterhouse would have no knowledge.
10. ~~2 of~~ Waterhouse's patients were brought in for  
 other purposes. Intestinal obstruction one - brought  
 in to another hospital - transferred.  
 Addison's disease other need Rx
11. a. Excretion patterns.  
 b. Medical history - late follow up of effects.  
 c. Late Pex patterns of deposition in bone.
12. Joe Med. Branch would not fund studies for Pat  
 perse but suggested that work be done by Bob. Joe  
 suggested that Bob do studies. Bob payed part of  
 Pat's expenses.

13. Talked to Sid in June, 1973.

~~14. Sid in June~~

14. Bob talked to Pat in May, 1972 about getting Pat's files but files were Xeroxed first.

15. Human Use Committee - talk to Stehney.

16. E. Newman Petit - technical