CORRECTED.

DR. G. HERZBERG #1 (FWD.)

Broadcast CBC Radio Feb. 1976 on "Quirks + Quarks" prod. David SUZUKI (UBC)

010 Concern with science policy has led to little good in Canada

(a) Just govt. concern over high cost of research

(b) Bureaucrats — PPB &c.

028 H's annual planning c. 1948 took ≤ 1 day's work for all Physics div. 1976 admin. chores far greater

E.g. govt. centralized purchasing via DSS

040 is far less efficent for NRC than in 1950. filling in forms makes inroads into NRC time. At NRC administrators have increased and researchers declined since Steacie's day. E.W.R. STEACIE

054 1947 Steacie told Herzberg his admin task was to hire good men and do good work

060 1976 red tape limits NRC productivity.

065 Treasury Board policy 1976 is directed research (national problems.)

H seeks some research for knowledge's sake: genuine discoveries can't be planned (e.g. laser) came from microwave spectroscopy)

081 Applied research can rarely be planned: researcher must be free to choose that problem he considers feasible.

085 Govt. decisions (e.g. TRIUMF) cannot be financed from "regular" science budget.

098 Politicians provide $. but H. seeks non-lobby voice for policy advice (e.g. telescope).

HERZBERG #1 (FWD.)

108 H's arrival at NRC 1947: paramount influence of E.W.R. STEACIE esp. perception of research problems cutting red tape.
While president, S. consulted H. on own free rad. research — in H's office (not summoning to president's office)

126 Half a dozen men of S. quality (are needed)
Despite good staff 1976, the golden age is over — bureaucracy shortage of $ &c.

140 Atmosphere at NRC has changed subtly.

146 (ends.)

DRURY #1 (FWD.) (C.B.C. broadcast Q+A)

157 MoSST was ill planned: now reorg. by Maurice LECLAIR as "helpmeet" instead of boss for science as social tool: & "If it can't (help) there is no reason for science, for its own sake, to exist."

173 Basic research deserves $ but science is tool, not end in itself.
Basic science is essential tool for education, teaching to think.

187 ∴ leclair reorg. of MoSST to plan govt. wide usefulness of science.

194 Canada in world science: rank OK tho few in "hall of fame". Cdn strengths — radioastronomy &c.

DRURY # 1 (R&D.)

207 $ inflation has increased research cost 50%
(a) ~~[illegible]~~ Rate of growth of 1960s $ could not go on for ever.
(b) 1975-76 increase to allow for inflation: no agreement on how much increase needed
(c) No firm grants policy: research-for-training is easier to plan than research-for-knowledge.

255 Goal aim in science is excellence across only part of whole spectrum. Choice of which part "hopefully" by researchers' consensus.

276 Arbitration when funds limited ~~can~~ may involve ignorant politicians when scientists disagree.

293 Cda. should do serious science
(a) to provide career opportunities for Cdns.
(b) (no answer

324 Cdn. basic R+D $ is up to par: ~~[illegible]~~ industrial R+D is below par — cf. ~~[illegible]~~ easy access to U.S. technology.

338 ~~[illegible]~~

~~[illegible]~~

~~[illegible]~~

~~[illegible]~~

Incentives to IR+D for native Cdn. technology are ~~[illegible]~~ the price of national pride

SUZUKI comment on Drury's concept of "science as tool" ~~[illegible]~~ &c.

(interview ends)

Dr. G. HERZBERG #2 (FWD.) 25 Oct. 76

004 U. Sask staff at H's arrival included — Dr. J.B. HARRINGTON

026 1200 students + 100 faculty 1935 ∴ H knew all staff: CJM a forceful personality (lent Dean C. J. MACKENZIE

039 L. Gray to H to illustrate Vol 1 of Molecular Spectra and Molecular Structure ~~Atom. Spect + Atom. Struct.~~ Louie GRAY

059 CJM active in Saskatoon public life e.g
— 25th St. bridge
— alkali cement research Dr. T. THORVALDSEN
— sat on city council
CJM's membership of HAC known to Herzberg only later e.g. 1939

0

061 Only Sask. spectroscopy eqpt. was one small quartz S-graph 1935: H brought another (since unable to bring cash from Germany.)
H needed grating S-graph ∴ applied (J.T.W. SPINKS)
to NRC for grant, via Phys. Dept. head — E.L. HARRINGTON
[c.f. correspondence in Public Archives.]

075 NRC grant refused: no eqpt. grants ~~[illegible]~~ R.W. BOYLE
H soon got staff post U. Sask. (after 3 mo.) Pres. Walter MURRAY

087 1936 U. Sask closure contemplated (after drought ruined crops.)
NRC eqpt. grant rejected ($1-1½k)
H's own S-graph cost c. $300

103 Jan. 1937 H attended first N. American physics meeting (Princeton) where met astron. H.N. RUSSELL
who secured eqpt. grant from American Philos. Society. Grating ($500) from Johns Hopkins R.W. WOOD
Univ. (world's best ~~[illegible]~~ for H in Darmstadt: disappeared in war.)

HERZBERG #2 (FOD.)

132 (NRC BIOS party 1945) M.S. KUHRING
W.H. COOK

136 Shrum's research career was over by 1935: G.L. SHRUM
"real go getter" as research organizer.

148 1936 H first visited West Coast: Seattle
(Amer. Phys. Soc. meeting) and UBC where met. HEBB
(H. paid own fares: no travel grants 1936, when
researchers used to paying own way.)

169 Agenda: when NRC formally authorize
travel grants? (cf. value via Grain Research Ctees.) VANTERPOOL
Don RAWSON

Sect. A

186 Cdn. Jnl. of Research had low status 1936.
H first American publications — Phys. Rev.
— Nature
— German periodicals
— J. Phys. Chem
— CJR (1937-40)

H. pub. in CJR initially out of courtesy: also
read to assess physics in new homeland

222 ~~CJR~~/ CJ Physics created 1951

237 Editors 1935 — F.E. LATHE
1942(?) — S.J. COOK

248 H's first CJP paper ~~last~~ 1937 edited out of first
person (into third) by editor: H objected.

266 Leo MARION

275 No NRC div. directors had ~~ex~~ ex officio
relationship to CJR/CJP. H may have
advised Marion informally but did not join
CJP editorial board until later (19).

HERZBERG #2 (FWD.)

313 H first knew of Steacie when Wright recruited H for defence research c. 1945 (when H technically enemy alien: irrelevant to S + W) E.W.R. STEACIE G.F. WRIGHT

344 H was eligible for Cdn. citizenship 1939 but did not know U.K. residence (1934-35) counted: ∴ H applied 1940: application mislaid in Ottawa.

HERZBERG # ~~3~~ 2 (REV.)

000 ~~[illegible]~~ ~~[illegible]~~ H. finally became Cdn. citizen a few months before moving to U.S.A 1945: cf. L. STOKES in C. Hist. Review (1976)

020 H + Steacie met briefly in Germany c. 1934. In wartime H + S knew each others publications. E.W.R. STEACIE BONHOEFFER

028 Spinks' role: wrote Steacie when H unhappy in Chicago: Steacie followed up at once, opening negotiations for NRC job. J.T.W. SPINKS

038 ~~NRC Phys Div position~~ H was hired by NRC as Prin. Res. Off. 1948 R.W. BOYLE

050 Boyle was useless (as director Physics Div.) by 1948: no longer businesslike (garrulous; senile? also still resented not being made NRC president 1935). D. C.J. MACKENZIE Dr. H.M. TORY

066 Steacie was H's main contact at NRC: pro forma approval by Boyle E.W.R. STEACIE

H. joined NRC 9 Aug. 1948 as Pr. Res. Off.: spectroscopy lab not ready ∴ H worked on 2nd edn.

HERZBERG #2 (RVS)

080 His lab was set up by self + (former student) D. Alec DOUGLAS
1948 3 candidates to succeed Boyle: H. + { D. D.C. ROSE
H. discussed directorship with Rose { D. L.E. HOWLETT
and with Steacie who promised admin. function D. E.W.R. STEACIE
would not limit research. CJM offered D. C.J. MACKENZIE
directorship Jan. 1949: H accepted
104 with LEH as asst. director (later assoc. D. L.E. HOWLETT
dir., co-director &c.)

110 Evolution of separate divs. of Pure + Applied Physics.

[Restrictions on historical taped interviews.]

127 Phys. Div. 1949-55 ~~was taken~~ included Material from
natural groupings for pure + applied research, #127 to #184
~~(illegible)~~ supervised by Herzberg + Howlett respec- is restricted.
tively, with Howlett i/c admin. for both groups.

140 Herzberg silently disapproved of some admin. decisions.

When all staff at Sussex Drive Labs, close pure/applied contact

157 c. 1957 Herzberg learned architects' plans existed for separate Montreal Road Applied Physics labs: complained to S. Pres. E.W.R. STEACIE

Thus Herzberg consented to formal separation of Pure + Applied Phys. Divs: a mistake (unlike creation of 2 Chem. Divs.)

176 If fortunately forewarned, Herzberg would not have consented to separation of 2 phys. divisions. (For extra space, Biol. Div. might have vacated SDL.)

184 Recombination of single division (1969) is good.

HERZBERG #2 (RVS)

185 Role of HAC in reorganizing & lab. divisions. Pres. E.W.R. STEACIE
President/director relations 1952-62 were basically individual + bilateral. Regular directors meetings were only for staff transitions (president absent). Dr. W.H. COOK

211 Steacie set a ~~pattern~~ model (for NRC Pres. style + policy) successors could not follow: ~~(could not create~~ insufficient advance notice to prepare any Steacie model. Pres. B.G. BALLARD

220 Shock of Steacie's death 1962 Dr. H.G. THODE
Thode — Steacie's "only ideal successor," but was committed to McMaster Univ.

252 Had Steacie lived, fewer NRC problems 1976 Dr. Pierre GENDRON
(but c.f. Gendron 1F/025 on Steacie's reappraisal of own policies.)

274 Steacie created IRAP 1958

280 ~~Herzberg~~ HAC had no role in lab division policy when H. director 1949-69

290 Cf. Yugoslav visitor's approval of H's policy as "non-directing director". D.J.D. BABBITT
basic philosophy — find good staff and leave them alone, even in Applied Divs. Pres. E.W.R. STEACIE Sen. M. LAMONTAGNE

330 In Herzberg Inst. of Astrophysics, H gives no instructions to staff — only encouragement. This H learned from Steacie.

350 (ends.)

HERZBERG #3 (FWD)

000 Absolute size of research community (since rapid growth 1950-70) makes it more difficult to identify true talent.

015 Planners cannot expect uniformly top quality in research (even basic research) one has to expect a proportion of "ducks" and provide for them (e.g. teaching + routine research.)

027 [Social attitudes of researchers — Dr. W.H. COOK
[c.f. Field + Howlett both sought scope — Dr. R.W. BOYLE
for "useful" research c. 1934 — Dr. George FIELD
[Do younger researchers (since 1950) think — Dr. L.E. HOWLETT
society ought to support them carte blanche?] — Dr. D.C. ROSE

059 Best policy for H. Inst. Astrophysics is pure science which can transcend "social benefits." Staff should be selected for willingness to work really hard — which the "talented few" enjoy most anyway.

075 NRC has H. Inst. Astrop. for historical reasons, viz. building on accrued strength: this outweighs ~~theoretical~~ (valid) theory that basic research belongs outside government.

090 Change in NRC staffing policy 1930 → 1960: centres of excellence rather than "matched set" of all specialities.

100 Applied research institution suffers without direct contact with top quality basic research.

HERZBERG #3 (FOD.)

110 Routine testing in Phy. Div. was admin. by Dr. L.E. HOWLETT
e.g. { R.H. FIELD
A.J. GRANT
Routine elec. testing ended at death or retirement of Grant: both Howlett and Steacie wanted fundamental stds. work but no routine tests Pres. E.W.R. STEACIE

130 H dealt with no associate committees of importance as director.

135 NRC extramural research grants. Dr. E.W.R. STEACIE
Div. directors would review applications and recommend to HAC. Dr. W.H. COOK
Herzberg + Steacie/Marion did this alone: Cook had small B.S.I. Div. committee

159 Grants committees created c. 1960 with univ. prof. chairman and NRC div. director ex officio member. H would prepare decisions for approval by committee (thus relieving demand on HAC's time.)
[NRC V-P McK ended div. involvement in grants committees c. 1970] Dr. D.R.W. McKINLEY

180 Steacie got Treasury Board to increase univ. grants by declining $1M approved for NR Labs. expansion. Pres. E.W.R. STEACIE Fin. Min. Donald FLEMING

200 No conflict of interest between NR labs and NRC grants/scholarships

205 Grants policy has reversed:
1930 — support of proven indiv. talent
1965 — regional/language considerations for uniform dist. of universities.

HERZBERG #3 (FWD.)

226 Grants committee members were originally chosen by div. directors ∴ it chose univ. staff whose own grants were not in dispute (and resisted regional representation policy as diluting talent.)

~~245 One of NRC president's strengths in past was talent attracting~~

245 NRC prestige (esply. presidency) has declined partly because, since growth, no one man can any more judge all talent in one field.

263 Hardest policy decision of all is basic $ allocation between physics, chem, biol. &c.

270 Post. Doctoral Fellowships were planned by D. E.W.R. STEACIE
1 — to exploit vacant posts
2 — to get "turnover" of new blood (Chem. Div. c. 1948, Phys. Div. c. 1949)

290 Quality of PDFs' work at NRC has much increased NRC prestige.

300 Target of PDF system was not to provide jobs for PDF Canadians or to attract immigrants but simply to bring top talent into NRC for a finite term, for mutual benefit.

C.f. Parlt. Ctee hearings 1960, and Steacie's contributions to its final report. MURPHY

356 (ends)

HERZBERG 3 (RVS)

000 [Biographies as vehicle for history of science — Pres. C.J. MACKENZIE
Pres. E.W.R. STEACIE
Mel W. THISTLE
D. J.D. BABBITT
D. W.E.K. MIDDLETON
D. N.T. GRIDGEMAN
D. A.W. TICKNER

[Middleton / NRC Archives relation
[c.f. Biol. Div. history
[c.f. disorder in NRC archival documents:
need to ~~reorder~~ rearrange + supplement PAC holdings:
early Phys. Div. archives (1930-40) as model?]

039 H. has preserved all own ~~correspondence~~
scientific correspondence in own custody (and — Pres. A.G.L. McNAUGHTON
passed admin. papers to NRC Registry)
Staff exercised 1976 over mail redirected
by clerks to other people

050 Evolution of Red Tape at NRC — D. F.W. ROSSER
Administrative class had to grow after 1962 since — Pres. E.W.R. STEACIE
could not be replaced by any one man: (S.
had cut red tape wherever possible.)

067 M. was brought to Canada by H. (from Oxford) — D. D.K.C. MacDONALD
via Simon, since H + H agreed a solid state — Sir Francis SIMON
physics lab was needed: (helium liquefier — D. L.E. HOWLETT
bought ~~before any~~ as soon as $ available.)

080 Simon recommended Macdonald + Daniels. — DANIELS
M was H's most difficult subordinate —
always wanted exemption from admin. rules —
i.e. accounted ~~&~~ alone for half H's admin. time.

HERZBERG #3 (ROS)

100 H + Howlett decision to begin solid state lab was not extended to decision on helium, semiconductors &c. — Dr. L.E. HOWLETT

113 M. was an ultra hard worker ∴ authorized at own request to teach at U.Ott. — Dr. D.K.C. MacDONALD

121 NRC role in ~~[illegible]~~ Ott. science ~~[illegible]~~ community. c.f. statistics in 1930s. — Dr. J. HOPKINS

134 E.g. NRC authorized Hincks employed half time each at Carleton Univ. + NRC 10 years — E.P. HINCKS

150 1976 Carleton Univ. first rate e.g — WATSON

160 Norman BALL (PAC) to meet Herzberg?

171 As staff member c. 1956, Middleton unaware that Howlett planned App. Phys. Div. behind Herzberg's back. — Dr. W.E.K. MIDDLETON

* What do HAC minutes say? *

187 Under Steacie, HAC probably ignored NR Labs: as univ. men, members were interested in grants policy, ~~[illegible]~~ — Pres. E.W.R. STEACIE

200 C.f. probable indifference to NRC of industry. Steacie dropped HAC Review Cttee: too remote to be effective. — Sen. M. LAMONTAGNE

228 Lamontagne Senate Committee never visited nearby NRC (c.f. Washington visits &c.)

255 MoSST 3 classifications of research. — Hon. Jeanne SAUVE

292 It would be "crazy" and wasteful to replace NRC grants system. — Dr. Aurèle BEAULNES, Dr. Pierre BOURGAULT, Hon. C.H. DRURY

301 (Interview ends)