

WOMEN OF VALOR

Jewish Heroes Across Time

Jewish
Women's
Archive { Part of [Sharing Stories/Inspiring Change:](#)
A Webinar Series for Jewish Educators

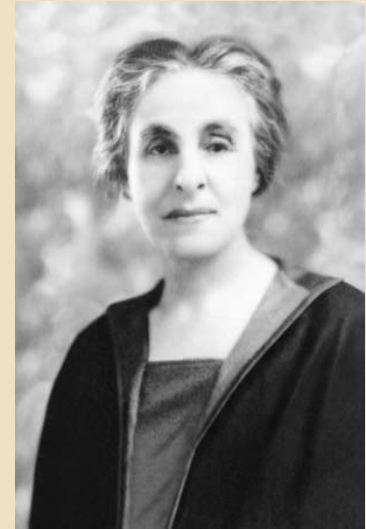
MEET THREE WOMEN OF VALOR



Gertrude Elion



Hannah
Greenebaum
Solomon



Ray Frank

GERTRUDE ELION



Born in 1918 in NYC

Gertrude and her mother, Bertha Cohen Elion

REPORT TO PARENTS

Cycston

JUNIOR HIGH SCHOOL

Report of

Elion, Gertrude

Last Name

First Name

Term
Ending*6/30/30*

Class

103

Teacher

Shurkman

Ratings	Excellent A or 86 to 100	Good B or 76 to 85	Passing C or 60 to 75	Poor D or 40 to 59	Very Poor D or 0 to 39
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SUBJECTS	Grade	1 2 3 4 5					Passed or Failed
		Prelim- inary	Mid-Term		End-Term		
			Mark	Exam.	Mark	Exam.	
Effort							
Proficiency							
Conduct Self-Control		A		A			
Personal Habits		A					
Times Absent		0					
Times Late		0					
Reading and Literature	3	95	95	95	100	100	
Composition	1	85	70	75	75	80	
Grammar	1	90	40	42	99	100	
Spelling	1	100	100	97	96	98	
Oral Expression			70				
Penmanship							
Arithmetic and Algebra	5	91	84	95	96	92	
History							
Geography							
Shop Cooking							
Science Sewing							
Music	2	100	100	100	100	100	
Physical Training	4	70	70	70	70	70	
Drawing	5	80	86	73	65	80	
Foreign Language	5	97	100	100	100	93	
Biology	5	79	82	86	86	98	
Community Civics							
Bookkeeping							
Stenography							
Typewriting							
Office Practice							

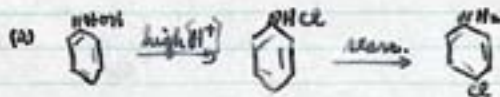
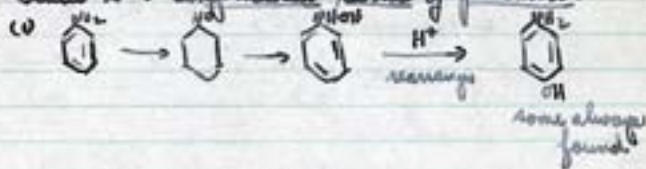
*Winner of medal
Given for general excellence
Magna Cum Laude*

Elion's report card
from 1930.

4) Acid Reduction

a) Reagents: Metal + acid (e.g. Sn + HCl)
 $\text{SnCl}_2 + \text{alcoholic HCl}$

b) Leads to a complicated series of products.

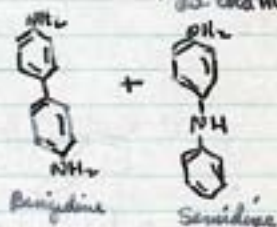


(3) The ϕNHOH reacts with some ϕNH_2 which has also been formed.



phenylhydrazine
 $\downarrow \text{H}^+$
 Benzidine-Semidine rearrangement
 (occurs then in cold HCl)

Note: These reactions occur only to a slight extent



(4) Principal Product is ϕNH_2



(5) In acid reduction, the Semidine formed is very easily oxidized e.g. by ϕNO

A page from Elion's chemistry notebook



Gertrude Elion and Leonard Carter

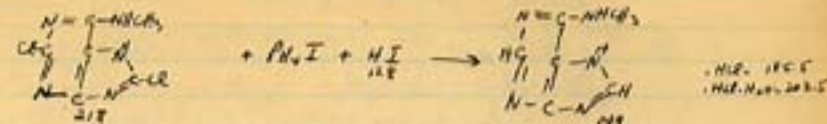


Elion in the Burroughs Wellcome laboratory



Gertrude Elion and George Hitchings

Prep. of 6-Mercaptopurine



In 24.5 cc. 48 g. HI (sp. gr. 1.96, 70%) added in small portions 3.1 g. 2,8 di Cl-6 Cl₂ NH₂ purine (YD 144A) + approx 4.5 g. PH₂I (Taken from ZD 76 bottle # 6) Slight cooling of heat. Continued stirring until all iodine was decolorized. Since there was considerable excess PH₂I, added another 1.0 g. 2,8 di Cl-6 Cl₂ NH₂ purine (YD 144A)

Continued stirring until all brown color gone. Pale yellow material left + some PH₂I. Heated to boiling for a few minutes. No change in appearance. Ppt did not go into soln. Chilled. Filled three sealed glass. Washed in seal. cc. ordinary conc. HI. Pale yellow ppt. was dissolved in ca. 50 cc. of water in mild heating, filtered + made alkaline in NH₄OH. On cooling, a colorless gelatinous mass ppted. Reheated, poured in ice in attempt to ppt. crystalline form. Some crpt. material formed but on cooling, jelly formed again. Allowed to stand at room temp. overnight.

Filtered. Small portion dried on porous plate - (A) mp 260-1°
Remainder filtered seal. hours longer. Still gelatinous. Washed in a little 95% EtOH. Did not help. Dried in vac. desicc. Yield = $\frac{3.35}{2.15}$ (B)

Precipitate: 2 small cuts of A dissolved in hot water, added peracetic acid. Pale yellow precipitate filt. off + resumpt from 25% EtOH. Bunches of small needles * mp 263-4° d. (C) (elemental precipitate dec ca 210°; mp 257-9°)

Hydrochloride: (A) was dissolved in 10 cc hot 24% HCl, chilled. Crystalline off-white ppt. Filtered, washed in ice cold 24% HCl, 2-3 cc absol EtOH, ether. Air dried. Ppt = 1.7 g. (D) (hydrochloride) Filtrate from (D) taken down to ca. 2 cc, chilled, filt., washed in cold EtOH, ether. Ppt = 0.55 g. (E) Filtrate from (E) taken down almost to dryness in air, 2 cc cold EtOH added + ppt. filtered off, washed in EtOH, ether. Air dried. Ppt = 0.45 g. (F) HCl. Alcohol washings from all C fractions combined, more ether added. White ppt. filt. off, washed in ether. Air dried. Ppt = 0.35 g. (G)

Purification of C + G: Jested C + G in small cuts. EtOH + abs. HCl. Allowed to stand. Turned yellow. + Ether, decant. Repeated until supernatant no longer yellow. Washed in ether. Air dried. Ppt = 1.85 g. (H) Mel. mp 272° d.

ZD 714
found
N-360

ZD 776
found
N-259

ZD 775
found
N-245

ZD 777
found
N-310

Contd. on Pg. 82

Elion's notes on the preparation of 6-Mercaptopurine which became the first effective chemotherapy for childhood leukemia.

Col.

2,697,709

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Whereas George H. Hitchings, of Tuckahoe, and Gertrude B. Elion, of Bronxville, New York, assignors to Burroughs Wellcome & Co. (U.S.A.) Inc., of Tuckahoe, New York, a corporation of New York,

presented to the Commissioner of Patents a petition praying for the grant of Letters Patent for an alleged new and useful invention the title and a description of which are contained in the specification of which a copy is herewith annexed and made a part hereof, and complied with the various requirements of Law in such cases made and provided, and

Whereas upon due examination made the said CLAIMANT is and is adjudged to be lawfully entitled to a patent under the Law;

Now therefore these Letters Patent are to grant unto the said Burroughs Wellcome & Co. (U.S.A.) Inc., its successors

for the term of SEVENTEEN YEARS FROM THE DATE OF THIS GRANT TO EXCLUDE OTHERS FROM MAKING OR SELLING THE SAID INVENTION THROUGHOUT THE UNITED STATES.



In testimony whereof, I have hereunto set my hand and caused the seal of the Patent Office to be affixed at the City of Washington this twenty-first day of December, the year of our Lord one thousand nine hundred and fifty-four, and of the Independence of the United States of America the one hundred and seventy-ninth.

Attest

E. M. Murray
Acting Attorney

Robert C. Weaver

One of 45 patents obtained by Elion



Elion in the lab



Elion wins the Nobel Prize, 1988



Gertrude Elion, 1918-1999

HANNAH GREENEBAUM SOLOMON





The Chicago Women's Club in Action



Citation: Greenebaum Solomon, Hannah. *Fabric of My Life*. New York: Bloch Publishing Company, 1946.

Essayists

Jan. 1, 1892.

COMMITTEE OF JEWISH CONGRESS.

Dear Madam:-

Your name has been given us to place upon our list of essayists for the Jewish Women's Congress, which will be held in Chicago during the last week of September, 1893, under the auspices of the Religious section of the World's Fair Congresses. The probable duration of the Congress will be three days, the first of which will be devoted to religious, the second to social and the third to philanthropic questions. The following subjects have been suggested and are submitted to you to choose from. However, should any other occur to you upon which you would prefer to write, will you kindly inform us at your earliest convenience.

Religious.

The Jewish women of Biblical and Mediaeval days (to 1500 A. D.).

Jewish women of Modern days (from 1500 to present time).

Life in the Ghetto.

Our pulpit and our Sunday-school.

The present status of the Jews (1) Educational, (2) Social, (3) Religious - The present and future of Judaism.

Social.

The influence of the discovery of America on the Jews.

The position of women in the Orient.

The influence of the Jewish religion in the Home.

Woman in the synagogue.

Women as wage - workers with special reference to directing immigrants.

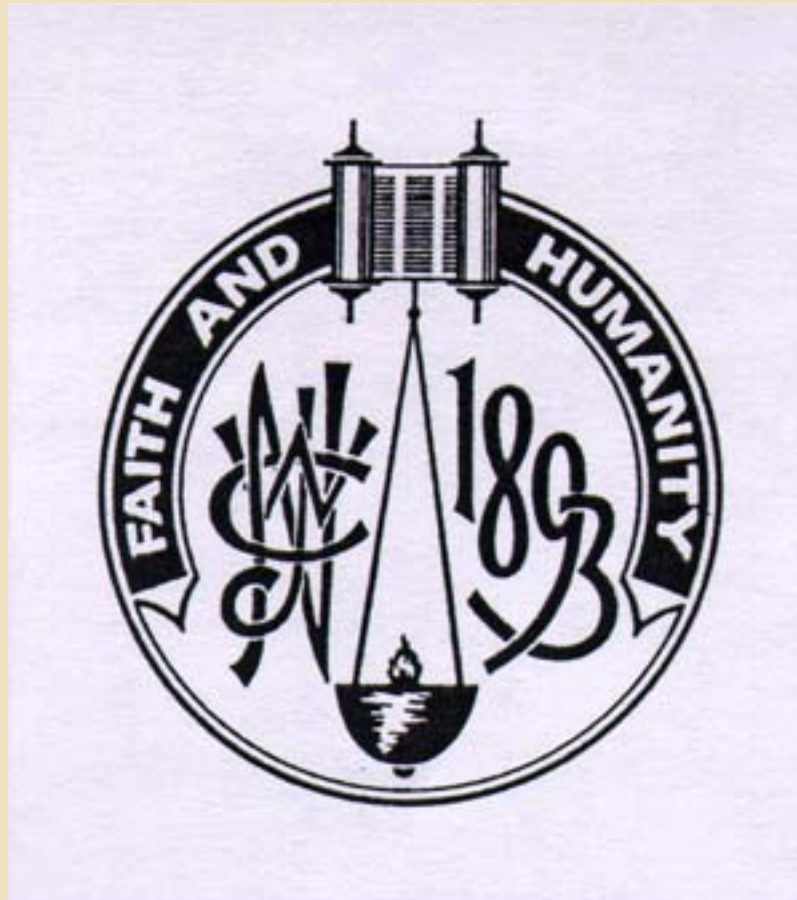
Mission work among the unenlightened classes of Jews.

Letter sent to potential speakers for the Jewish Women's Congress

1-4



Citation: Alois Kaiser, ed. *A Collection of the Principal Melodies of the Synagogue, From the Earliest Times to the Present*. Chicago: T. Rubovits, 1893





Greenebaum Solomon speaking at a synagogue

Citation: National Council of Jewish Women



Maxwell Street Market, Photo by Barnes-Crosby



“Sane 4th” Parade of Suffragists



Hannah Greenebaum Solomon, 1858-1942

RAY FRANK



Citation: American Jewish Historical Society

STATE EDUCATIONAL DIPLOMA

STATE OF NEVADA.



The State Board of Education

Hereby issues to Mrs. Rachel Frank this Diploma, valid for Six Years from date, which Diploma is issued in consideration of her good moral character, educational qualifications and successful experience in the Profession of Teaching.

Department of Public Instruction,
CARRIS CITY, July 10 1886

J. Adams
C. P. [Signature]
C. P. [Signature]

State Board of Education

A LAY SERMON BY A YOUNG LADY.*

Ladies and gentlemen, and—considering this is Yom Kippur eve, I know you will permit me to say—friends, brothers and sisters; for surely to-night is one of the most solemn and sacred periods in the lives of Israelites, for to-night, at least, we must be brother and sister in letter and spirit. My position this evening is a novel one. From time immemorial the Jewish woman has remained in the background of history, quite content to let the fathers and brothers be the principals in a picture wherein she shone only by a reflected light. And it is well that it has been so; for while she has let the stronger ones do battle for her throughout centuries of darkness and opposition, she has gathered strength and courage to come forward in an age of progressive enlightenment and do battle for herself if necessary, or prove by being a noble helpmeet how truly she appreciates the love which shielded her in the past.

THE MAIDEN IN THE TEMPLE.

The First Woman Since Deborah to
Preach in a Synagogue.

A YOUNG OAKLAND JEWESS MAKING
A STUDY OF THEOLOGY.

Miss Ray Frank, on Whom the Eyes
of the Hebrews of This Coast Are
Turned — A Significant Declaration
From a Fair Young Enthusiast Who
Is Now Lecturing on Hebrew Poetry.

Miss Ray Frank, a daughter of Israel,
has addressed a congregation in a syna-
gogue. That a woman should preach to the
Jews in one of their temples is more than
unusual; it has but one precedent in all

WOMAN IN THE SYNAGOGUE.

1. *How can she best serve its interests?*
 2. *Should she take an active part in the administration of its affairs?
If so, in what capacity?*
 3. *How can she best co-operate with the Sabbath School?*
 4. *Should she occupy the pulpit?*
 5. *How can societies composed of Jewish women be made of greater benefit to the Synagogue?*
-

The prominent part assumed by the Jewish woman of our day in religious matters has suggested the desirability of a symposium on "Woman in the Synagogue." Invitations were therefore sent to a number of prominent Jewish women to express their views upon the subject generally and upon the questions as above set forth. The following responses have been received:

WORK OF A WOMAN RABBI

Ray Frank's Opinions on
Large Subjects.

Believes in the Intellectual
Woman at Home.

A Young Jewish Enthusiast Who Lec-
tures on Art, Religion and
the Family.

"The home before everything," says Miss Ray Frank, the remarkable young woman who is journalist, author, priest, lecturer and orator, and who has been many other things that have taken her far from the domestic hearth; and yet the contradiction between herself and her theory is only seeming.



Simon Litman



Ray Frank, 1861-1948

THREE EXAMPLES OF HOW CHANGE IS MADE

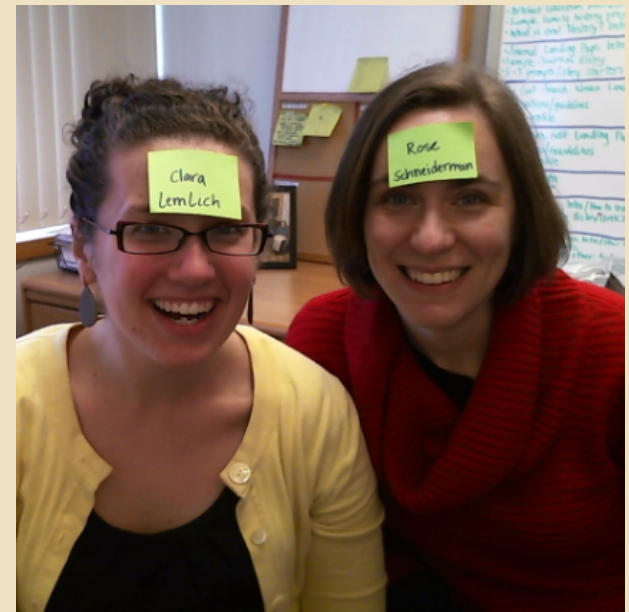
- How do you fight for access and new rights for women or for Jews?
- How explicit should you be?
- How and when should you avoid discussing women's issues? What kinds of privilege (class geography, family name) make that work easier?
- How does the fight for change for some Jews expand possibilities and strengthen community for all Jews?

INTRO ACTIVITIES

- Gauge what/who students already know
- Call out gaps in knowledge
- Get participants thinking about values and role models in different areas
- More description here:
<http://jwa.org/teach/bestpractices#boys>
- Can make a list as a group or do it as competition with teams

ALL AGES

- Study photos using Visual Thinking Strategies (VTS)
 - What is going on in this picture?
 - What do you see that makes you say that?
 - What more can we see?
- Play Celebrity/20 Questions
 - Fun way to synthesize learning
 - Can give participants a cheat sheet with facts
 - Great way to bring in comparisons with other role models or highlight connections to history, events, and people (e.g. was I a Zionist? Did I believe in women's suffrage? Did I know Martin Luther King, Jr.?)



ELEMENTARY-WAX MUSEUM



- Students research and curate the museum
- Can have guides, do audio recordings that play at each stop, add in video, etc.
- Bring in parents or other classes
- Have the actors/exhibit creators answer questions in a panel discussion as a means of reflection.

ELEMENTARY-BOARD GAME

- Make a timeline of events
 - Highlight decisions and important events
- Using timeline as a guide, create a Candyland style game
- Kids can design own boards and pieces
- Take turns playing the games in small groups

HIGH SCHOOL- TEA PARTY/DEBATES



- Students can explore the motives of historical players
- Discuss a past or contemporary issue in character
- Use real people to create discourse—differing opinions
- An excuse to eat food!

HIGH SCHOOL- GRAPHIC NOVELS

- Follow a whole life or just one event
- Can be done as drawings, on the computer, or multimedia art pieces
- Explore conflicts or difficult decisions
- Highlight the impact of an individual on the community by bringing in other characters

OTHER IDEAS ON JWA.ORG

- <http://jwa.org/teach/bestpractices/ideasfromfield>
- <http://jwa.org/teach/bestpractices/ideasfromjwa>
- <http://jwa.org/teach/bestpractices>

OR, share your ideas with us by leaving a comment on the March Webinar Webpage!

<http://jwa.org/teach/profdev/webinars/march13>