

personally have a respect for what the Gorgas ~~board~~ <sup>committees</sup> have achieved but more important what the institution represents in terms of both present and potential.

You honor me by your invitation to speak <sup>to you</sup> today ~~to the Board for I appreciate why to, well~~ <sup>without bias</sup> that ~~that it not been for~~ William Crawford Gorgas, <sup>These quite obviously would not have been</sup> a Gorgas Memorial Institute nor a Board. You would not have been party to a meeting such as this but, <sup>in view of</sup> ~~from~~ the remarkable skin of ~~historical events~~ <sup>historical events</sup> which followed ~~the~~ <sup>the</sup> remarkable ~~economic~~ <sup>economic</sup> of 1901, there is cause to question whether (1) there would have been a ~~global~~ <sup>global</sup> smallpox eradication campaign or (2) A School of Public Health at Johns Hopkins.

And, thus, today would truly have been a 'non-event'.

These last two points of conjecture are ~~not~~ <sup>not</sup> well-known but before returning to this subject ~~and to certain elements of history~~ <sup>and they are, I believe,</sup> ~~which are~~ <sup>relevant</sup> to several points I should like to make with regard to future ~~public health~~ <sup>public health</sup> developments in international public health - I offer a word of warning.

It is said that Deans customarily pass through 3 stages <sup>in their addresses</sup> - if they ~~last~~ <sup>survive</sup> long enough. And what with Brauman - Rudman, there appears to be little danger of many lasting much beyond a first stage.

- 1<sup>st</sup> stage - lasts for 3-5 years during which
- believe that you can really make some difference in the life of an institution.
  - retain some expertise in one's field
  - occasionally write papers and make presentations utilizing real data.
  - asked to serve on committees because of one's expertise

- 2<sup>nd</sup> stage - Perhaps likewise of 3-5 yrs. duration.
- administrative duties - <sup>sig. +</sup> in corrigible problems dealing w/ parking;
    - the problems of finding \$ for equipment which no one wishes to contribute such as cash washers and sterilizers
    - what to do w/ tenured faculty, who show some signs of burning out than you do
  - ~~asked to serve on committees~~ <sup>committee assignments</sup> ~~not~~ <sup>not</sup> because of what you know but because <sup>it is said</sup> ~~they~~ that members are needed who have no knowledge of the subject and so are presumably wholly unbiased.

- Presentations are more likely to be primarily rooted in pep-talks for chemicals — and are singularly lacking in data.

3rd - stage before fuel burn-out -

- Concluded that the inconvertible problems will never be solved.
- One begins to read history <sup>and to hope</sup> to ~~find~~ solace in the fact that your predecessors really didn't have it ~~any~~ <sup>much</sup> better. (Recent memo from W. H. Frost to the President of NIH - complaining bitterly about the U's bloated administration & costs).
- At the same time, one begins to wonder if perhaps the past might not be instructive to the future. Gives one a renewed impetus to return to the fray although <sup>perhaps</sup> ~~find~~ a new mode..

I'm now beginning year 10 at Johns Hopkins and so, like or not, you are going to have to put up with some history — history <sup>with</sup> which I know most of you are familiar — but ~~nonetheless~~ <sup>which</sup> history <sup>is</sup> important to ~~my~~ <sup>what</sup> I should like to see done.

First, — a word as to what Borjas had to do with smallpox eradication and Johns Hopkins.

In July 1902 he wrote

"I look forward to a time when yellow fever will have entirely disappeared as a disease & which mankind is subject, for I believe that when the yellow fever parasite has become extinct, it can no more return than the dodo or any other species of animal that has disappeared from the earth."

Different from what Jenner had asserted 100 years earlier re. smallpox:

- Jenner expressed a hope, not ~~envisaging~~ <sup>envisaging</sup> an operational plan
- Borjas saw y.f. erad. as a practical p.h. undertaking and behaved in it speedily.

Not the first eradication effort, labelled as such

- + 1884 Bureau of Animal Industry created — bovine contagious pleuropneumonia — Gyp.
- + 1909 — <sup>applied E</sup> human infection — Rockefeller Foundation embarked on this enterprise <sup>with</sup> little science and a great deal of organizational fervor.

Borjas saw y.f. erad. as a practical ~~scientific~~ <sup>scientific</sup> undertaking <sup>with</sup> ~~scientific~~ <sup>scientific</sup> underpinning to support it.

1904 Gorgas was detailed to Panama and in 16 months ~~achieved~~ <sup>Panama</sup> - free of y.f.  
He argued for the global erad. of y.f. achieved by stopping transmission in key urban areas.

1913 Rockefeller Foundation established and its International Health Commission - its ~~policy~~ <sup>policy</sup> being "to confine itself to projects of an important character, too large to be undertaken, or otherwise unlikely to be undertaken by other agencies and to "go to the root of individual or social ~~with~~ ill-being and misery".

Rose, new director, to Asia to consult w health officials & to decide what might be done.  
Their concern - the Panama Canal - to be opened in 1914 - and concern about the introduction of y.f. into Asia.

I.H.C. resolved:  
May 1915 - ~~Resolution~~: "that the I.H.C. is prepared to give aid in the eradication of this disease in those areas where the infection is endemic and where conditions would seem to invite cooperation for its control."

- 5 years for Americas; further assessment needed re: Africa.

+ Need for large nos. of a new breed of M.D. - one knowledgeable in business pertaining to p.h. and training in management & organization.

- Wm. Welch proposed the idea of a SPHT and in 1916, the decision was made to support the development of one at JH. - later ~~in~~ <sup>in</sup> 20 countries.

<sup>From this</sup>  
• Campaign in the Americas - largest being in Brazil - ~~brought~~ <sup>emerged</sup> the dedicated, single-minded Fred Soper who, as you know  
• Y.f. → *Aedes aegypti* erad.  
• *Anopheles gambiae*

After WW II - an Director of ~~PHS~~ - sustained the belief in the Holy Grail of eradication.  
Yaws, *A. aegypti*, malaria, smallpox in his 1<sup>st</sup> 3 yrs - as director.

From 1953-73 - Dr. Marcelino Candau - brought up in the y.f. service committed resources as never before for any disease to malaria eradication.

Eradication, ~~is~~ <sup>is</sup> a concept, was kept alive & alive <sup>primarily</sup> by those whose intellectual heritage was bourgeois. Smelly eradication emerged as this concept was barely flickering - René Dubois.

And so, my ~~own~~ <sup>own</sup> career and the existence of IATD are intimately associated to Gorgas.

Walter Reed's vivid account of events in Havana from June 1900 bears reading - as they suggest to me principles <sup>for addressing public health & development</sup> ~~in~~ <sup>from</sup> which we have ~~learned~~ <sup>derived</sup> few and suggest policies for the future which bear scrutiny.

In June 1900 - the belief was strong that ~~the responsible agent~~

- the responsible agent was bacillus icteroides
- transmission from place to place was by the individual, esp. his clothing
- the patient's excreta were considered especially contagious.
- cleanliness was the ~~the~~ answer to the problem and this was what was done through that year.

By the end of the year - an epidemic developed to some 1400 cases.

Reed and his colleagues observed, however, that many of them in the hospital were acquiring disease from patients; that soldiers <sup>mistakenly</sup> ~~impersonally~~ clothing from a patient did not become ill; and that the pattern of spread could not be attributed to poisonous miasms.

Finlay had suggested ~~the~~ the Stogomyia mosquito as the cause but, failing to recognize the extrinsic incubation period, had not been able to confirm this in studies.

By November, Reed had discarded their original research plan intended to identify the specific agent and had established the Experimental Station designed specifically to ascertain the mode of spread of the disease.

By the end of January 1901, the last of 14 experimental <sup>human</sup> infections by mosquitoes <sup>and blood injected</sup> had been completed.

On 4 February 1901 - Gorgas set out on a specific campaign to eliminate the Stogomyia mosquito.

In September 1901 - the last case occurred in Harma and two weeks later, Reed demonstrated that y.f. was caused by a virus.

**Reap** - June 1900 (cliffhanger research agenda) → Feb 1901 experimental control measure  
Sept 1901 (end) ←  
Magnificent example of a circumstance

~~One could not hope to make a stronger case for a center which could~~ in which the clinical, the public health and the basic science components could interact together in the solution of a problem - but how many such centers do we have today? <sup>INCAP</sup> <sup>IDRRB</sup>

More customary: ↓ Basic science funded by **NIAH** - provided it has domestic applications.

↓ Field applications by **USAID** - accession to research.

<sup>traditional foundations who once contributed to such</sup>

↓ Training of staff - no one's responsibility (Cite MAEN + GORRAS)

↓ Clinical research - all but forgotten.

We've forgotten history & lessons which suggest mechanisms for dealing with major health problems, care systems

As I read annual reports GORRAS today complains that tradition albeit with a budget & staff which can hardly be termed generous

Focus for IH  
Primary  
HTS

Health / post-war in industrialized world - not unexpectedly has been echoed in dev. world.

↑ interventions

↑ M.D.'s

↑ hospitals.

~~Developing world - Health~~

Theme: curative care

Translated to the developing world

Hospitals

Health centers (w.b. smallpox vaccination)

Research - to address <sup>issues in</sup> prevention have been required (w.b. DPT)

- yet these are the primary issues of the developing world.

Had Reed arrived in Harma in the climate of the 1960's-70's -

Flock of RFP's to a scattered group of research sites

Hospital construction project; a new H<sub>2</sub>O and sewage system;

and clinical laboratories to define serum antibodies levels.

Consultants

Should be part of int

~~Best~~ - patterns of research in agriculture and health have diverged.

Title XII (in all its faults) developed academic cooperation

Agricultural Research Centers. → national centers → "Green Revolution"

Health <sup>Research fragmented</sup> <sup>Clinical Prog. med. ~~superior~~ ? any center</sup> <sup>1 or 2 centers</sup> & depth & breadth of expertise to provide training in USA

Developing countries - name S (I due you).

No national center or department which is even charged to prep for policy develop. or prog. - oriented

Need: ~~Network of ctrs.~~ Basic science / clinical research & training / P.H. applications / products

~~Europe~~ Europe - situation is no better

Need: Network of ctrs. -

- science
- Basic ~~Applied~~
- Applied Technology
- Clinical <sup>medicine</sup> ~~research & training~~ <sup>Research</sup>
- P.H. application
- Education

interrelated  
set of activities  
no. / program / center

Interest in <sup>comin</sup> ~~prog~~ & Hopkins - Intl. Health

Success is, in part, as close to a model as you can get.

Hopkins - building an international health prog. - into 7 years from many sources

future vision -

Source of funds <sup>USPHS</sup> <sup>NIH</sup> <sup>Foundations</sup> <sup>Industry</sup>

of our \$60M. - \$10-15 x 10<sup>6</sup> / year  
60+ fac. & faculty  
15-20 faculty based abroad.

- Ctr. for Epi and P.H. Optimal
- Div. of Geographic Medicine
- Pop. Inf. ~~Prog.~~ Prog. + Pop. Comm. Prog.
- Ctr. for Immun. Research
- Int. Council for Trop. Health - 35
- IIP.