Snippets from the Past: 70 Years Ago in the Journal

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Papers on topics related to bacteriology, protozoology, or helminthology constituted the bulk of the Journal’s contents again in 1934. Even among those selected for Snippets, only two deal with chronic disease. Five should interest the historians among us because they introduce five giants of preventive medicine and public health. They are listed below in alphabetic order. Before reading further, see whether you can match their names with the topics of the papers they are associated with.

2. Fred Soper b. Deafness
3. William Wells c. Droplet nuclei
4. C-E. A. Winslow d. Pneumonia
5. Hans Zinsser e. Yellow fever (viscerotomes)


“The skin is one of the largest organs making up the body of man” (p. 217). In spite of its size and availability for study, little is known about its functions beyond mechanical protection, heat regulation, and sensation. The authors found that when several different kinds of viable bacteria were placed on the hands and arms of human volunteers, the numbers of organisms decreased by 7 percent to 13 percent of the original numbers, respectively, after 5 minutes on dry skin and 32 percent to 27 percent on moist skin. After 30–40 minutes, no living bacteria could be demonstrated. The results of a variety of experiments on humans and rabbits suggest that “keratin may play a role in the removal of bacterial as well as other antigens from human skin” (p. 227).

Wells WF. On air-borne infection. Study II. Droplets and droplet nuclei. Am J Hyg 1934;20:611–18.


In study II, Wells produces the following evidence: “Droplet infection is essentially localized and concentrated while infection broadcast by droplet nuclei is dispersed and dilute. … Better comprehension of the bacterial behavior of air may … elucidate the epidemiology of diseases conveyed through the naso-pharynx” (pp. 617–618).

Study III tested the viability of various bacteria when suspended in droplet nuclei. The considerable differences seemed “to be consistent with the etiology, epidemiology and pathology of air-borne infection” (p. 627).


Hans Zinsser gives a thorough review of the epidemiology of Brill’s disease, concluding that it is a late relapse of typical typhus fever acquired as a rule in Europe. Rat reservoirs are not needed for the endemic perpetuation of Brill’s disease.


Although mortality from pneumonia is greater among males than females in the United States and many other countries, the sex ratio of pneumonia mortality in the United States varies considerably by age. Using mortality statistics from 1924, Doull et al. found that mortality among male infants exceeded that among females. This difference gradually decreased, essentially disappearing for the age group 10–14 years. From ages 15 to 60 years, the male:female ratio ranged between 140 and 160 per 100. Male mortality was only slightly higher at ages 60–69 years, becoming slightly lower than female mortality after that age. The male excess in mortality during working ages varied directly with the degree of urbanization in the state of residence, almost disappearing in rural states. Likely reasons for this association were the possibilities that high mortality rates were associ-
ated with specific industries with high pneumonia risks or that pneumococcal infections were more common in urban areas. The female excess in the oldest age groups was thought to be due, at least in part, to the removal from the population of the most susceptible males by earlier deaths.


In 1934, some persons believed that the anemia associated with hookworm infestation was due in part to the production of myelotoxic substances secreted by the adult worms or released upon the death of larvae. A thorough review of the literature and the results of their own experiments with dogs led Foster and Landsberg to conclude that the anemia of hookworm disease is microcytic hypochromic and results solely from chronic blood loss.


The author found that there was a considerable excess of deaf children who were less than 4 months of age at the time of the 1918 influenza epidemic. This excess was limited to schools in the South and became progressively more pronounced with decreasing latitude of the schools. In a prefatory note, C-E. A. Winslow called Heider’s observation “a truly dramatic incident in the history of vital statistics” (p. 756).


Rachel Jenss has continued the analyses of blood pressure records of US Army officers started by Reed and Love in 1931. These records come from annual examinations conducted during 1916–1930. Jenss notes that in the age group 20–24 years, men with high blood pressures initially tend to have lower blood pressures subsequently, and vice versa. (Strangely, regression to the mean is not mentioned!) After the age of 35 years, there is a steady increase in systolic blood pressure with age to age 60 years, accompanied by a moderate increase in the standard deviations of the readings.


The first of these two related articles describes a device called a “viscerotome.” This simple instrument was developed to allow lay workers to obtain a bit of liver tissue through a small stab wound in the abdominal wall. In areas where sporadic cases of yellow fever were suspected, viscerotomy was required to be performed on all persons who died from a febrile illness that had lasted less than 10 days.

The second paper reports on illnesses diagnosed by viscerotomy with emphasis on malaria and schistosomiasis. During the period from May 1930 through June 1933, 29,593 viscerotome specimens were obtained. Malaria was demonstrated in 7.8 percent of the specimens and schistosomiasis in 5.4 percent. Miliary granuloma, almost certainly tuberculous, were found in 408 specimens, an average annual rate of 129 per 100,000. (This rate is amazingly high when it is considered that the cases were limited to deaths involving a febrile illness that had lasted less than 10 days. I recall from my summer employment as a medical student in a tuberculosis sanatorium that there were miliary tubercles in the liver in nearly every autopsied patient, presumed to be a terminal blood-borne spread. In areas of the world where there is no death certification or where the diagnosis of the cause of death is undependable, tuberculosis control authorities should adopt viscerotomic examinations for all deaths, at least of a sample of them, to obtain a reasonable estimate of tuberculosis mortality as well as a supplement to case finding.)