TSUTSUGAMUSHI DISEASE. *See* Typhus fever.

TUBERCULIN. *See* Tuberculosis.

TUBERCULOSIS.

Chemotherapeutic action of streytomycin and promin in experimental tuberculosis. 1945. 10 p. il. (Public Health Service, Reprint 2658 from Public Health Reports.) 5¢. Catalog No. FS 2.7/a : 2658

Epidemiological study of calcified pulmonary lesions in Ohio county. 1941. 22 p. (Public Health Service, Reprint 2329 from Public Health Reports. 5¢. Catalog No. FS 2.7/a : 2329

Indians. Tuberculosis among certain Indian tribes of United States. 1909. 48 p. il. (Ethnology Bulletin 42.) Cloth, 50¢. Catalog No. SI 2.3 : 42

Post-sanatorium tuberculosis survival rates in Minnesota. 1941. 13 p. (Public Health Service, Reprint 2269 from Public Health Reports.) 5¢. Catalog No. FS 2.7/a : 2269

Posters.

Have your picture taken, guard against tuberculosis; [poster]. 1943. 14 x 10 in. (Public Health Service.) 5¢. Catalog No. FS 2.26 : T 79/no.3

Health wanted, have your chest X-rayed, find TB early; [poster]. 1943. 14 x 10 in. (Public Health Service.) 5¢. Catalog No. FS 2.26 : T 79/no.2

You may look healthy but what does your chest X-ray show? [poster.] 1943. 14 x 10 in. (Public Health Service.) 5¢. Catalog No. FS 2.26 : T 79/no.1

Quantitative studies of tuberculin reaction:

1. Titration of tuberculin sensitivity and its relation to tuberculous infection. 1941. 18 p. il. (Public Health Service, Reprint 2281 from Public Health Reports.) 5¢. Catalog No. FS 2.7/a : 2281

2. Efficiency of a quantitative patch test in detecting reactors to low doses of tuberculin. 1942. 11 p. il. (Public Health Service, Reprint 2340 from Public Health Reports.) 5¢. Catalog No. FS 2.7/a : 2340

Tuberculosis control by a small county health department. 1937. 12 p. (Public Health Service, Reprint 1822 from Public Health Reports.) 5¢. Catalog No. T 27.6/a : 1822

Brunswick-Greensville health administration studies no. 8.

Tuberculosis mortality among residents of the 92 cities of 100,000 or more population, United States, 1939–41. 1944. 13 p. (Public Health Service, Reprint 2567 from Public Health Reports.) 5¢. Catalog No. FS 2.7/a : 2567

Tuberculosis mortality in United States, 1939–41. 1943. 16 p. il. (Public Health Service, Reprint 2512 from Public Health Reports.) 10¢. Catalog No. FS 2.7/a : 2512

Tuberculosis of animals. *See* Price list 38, under the heading Diseases of livestock.

You're going to have your picture taken [X-ray for tuberculosis]. [1943.] 4 p. il. (Public Health Service, TB Folder 1.) 5¢. Catalog No. FS 2.42 : 1

See also Death and death rates; Industrial dust hazards; Medical information; Mortality; Penicillin; Public health; Venereal diseases.

TULAREMIA.

Isolation of Pasteurella tularensis from sputum, report of successful isolations from three cases without respiratory symptoms. 1945. 4 p. (Public Health Service, Reprint 2653 from Public Health Reports.) 5¢. Catalog No. FS 2.7/a : 2653

These studies are concerned with the isolation of P. tularensis from the sputum of three individuals with tularemia, none of whom manifested symptoms referable to involvment of the respiratory tract.

Occurrence of tularemia in rabbit tick (Haemaphysalis leporis-palustris) in Alaska. 1938. 2 p. (Public Health Reprint 1925.) 5¢. Catalog No. T 27.6/a : 1925

TULAREMIA—Continued.

Pathology of experimental tularemia in the golden hamster (Cricetus auratus). 1946. 12 p. (Public Health Service, Reprint 2665 from Public Health Reports.) 5¢. Catalog No. FS 2.7/a : 2665

Relative value of liquid media, glucose cystine blood agar, and mouse inoculation in the titration of Pasteurella tularensis. 1945. 6 p. (Public Health Service, Reprint 2641 from Public Health Reports.) 5¢. Catalog No. FS 2.7/a : 2641

It is the purpose of this paper to report our experience with liquid media and to report the relative merit of modified Steinhaus media, glucose cystine blood agar, and mouse inoculation in the enumeration of P. tularensis. The strains of P. tularensis used had been isolated recently from patients suffering from tularemia.

Report of case of tularemia contracted from a coyote (Canis lestes) in New Mexico. (Public Health Reprint 1356.) 5¢. Catalog No. T 27.6/a : 1356

Susceptibility of the golden hamster (Cricetus auratus) to tularemia. 1945. 4 p. (Public Health Service, Reprint 2640 to Public Health Reports.) 5¢. Catalog No. FS 2.7/a : 2640

Tularemia among meadow mice in California. (Public Health Reprint 1206.) 5¢. Catalog No. T 27.6/a : 1206

Tularemia, attempted transmission by each of two species of fleas, Xenopsylla cheopis (Roths.) and Diamanus montanus (Baker). 1946. 8 p. (Public Health Service, Reprint 2689 from Public Health Reports.) 5¢. FS 2.7/a : 2689

Tularemia, spontaneous occurrence in the chipmunk. 1945. 1 p. (Public Health Service, Reprint 2596 from Public Health Reports.) 5¢. Catalog No. FS 2.7/a : 2596

Tularemia, spontaneous occurrence in shrews. 1943. 1 p. (Public Health Service, Reprint 2481 from Public Health Reports.) 5¢. Catalog No. FS 2.7/a : 2481

TUMORS.

Action of 2-amino-5-azotoluene in the production of liver tumors of rats and the behavior of these tumors in vitro. 1941. 20 p. pl. (Public Health Service, Reprint 23 from Journal of National Cancer Institute.) 10¢. Catalog No. FS 2.31/a : 23

Attempts to produce tumors in rats by feeding crude wheat germ oil made by prolonged ether extraction. 1940. 8 p. (Public Health Reprint 2147.) 5¢. Catalog No. FS 2.7/a : 2147

Breast and lung carcinoma in "A" stock mice. 1939. 13 p. il. (Public Health Reprint 2044.) 5¢. Catalog No. FS 2.7/a : 2044

Relates to study of tumors.

Dibenzanthracene tumors in mice, the production of subcutaneous and pulmonary tumors by 1, 2, 5, 6-dibenzanthracene adsorbed on charcoal. 1938. 14 p. (Public Health Reprint 1894.) 5¢. Catalog No. T 27.6/a : 1894

Effect of colchicine and bacterial products upon transplantable and spontaneous tumors in mice. 1941. 6 p. il. (Public Health Service, Reprint 32 from Journal of National Cancer Institute.) 5¢. Catalog No. FS 2.31/a : 32

Effect of petroleum ether extract of mouse carcasses on skin tumor production in C57 black mice. 1940. 8 p. (Public Health Service, Reprint 2154 from Public Health Reports.) 5¢. Catalog No. FS 2.7/a : 2154

Further studies on the susceptibility of hybrid mice to induced and spontaneous tumors. 1941. 13 p. (Public Health Service, Reprint 14 from Journal of National Cancer Institute.) 5¢. Catalog No. FS 2.31/a : 14

Incidence of induced subcutaneous and pulmonary tumors and spontaneous mammary tumors in hybrid mice. 1938. 7 p. (Public Health Service, Reprint 1985 from Public Health Reports.) 5¢. Catalog No. T 27.6/a : 1985

TUMORS—Continued.

Incidence of spontaneous tumors in a colony of strain C₃H mice. 1937. 8 p. (Public Health Service, Reprint 1831 from Public Health Reports.) 5¢.
Catalog No. T 27.6/a : 1831

Induced pulmonary tumors in mice:
1–2. *Not issued by the Government.*

3. Role of chronic irrigation in the production of pulmonary tumors in strain A mice. 1941. 16 p. il. (Public Health Service, Reprint 22 from Journal of National Cancer Institute.) 5¢.
Catalog No. FS 2.31/a : 22

Induction of tumors in guinea pigs with subcutaneously injected methylcholanthrene. 1941. p. 707–725, il. (Public Health Service, Reprint 51 from Journal of National Cancer Institute.) 10¢. Catalog No. FS 2.31/a : 51

Influence of castration on the induction of subcutaneous tumors in mice of the C₃H strain by 1, 2, 5, 6-dibenzanthracene. 1939. 6 p. (Public Health Reprint 2079.) 5¢.
Catalog No. T 27.6/a : 2079

Influence of genetic constitution upon the induction of resistance to transplantable mouse tumors. 1940. 7 p. il. (Public Health Service, Reprint 35 from Journal of National Cancer Institute.) 5¢.
Catalog No. FS 2.31/a : 35

Influence of nonbreeding and foster nursing upon the occurrence of spontaneous breast tumors in strain C₃H mice. 1938. 6 p. (Public Health Reprint 1934.) 5¢.
Catalog No. T 27.6/a : 1934

Lung tumors and heredity: 1, Susceptibility of our inbred strains of mice and their hybrids to pulmonary tumors induced by subcutaneous injection. 1941. 9 p. il. (Public Health Service, Reprint 10 from Journal of National Cancer Institute.) 5¢.
Catalog No. FS 2.31/a : 10

Production of tumors in mice of strains C₃H and Y by dibenzanthracene and methylcholanthrene and pulmonary tumors in mice: 5, Further studies on influence of heredity upon spontaneous and induced lung tumors. 1938. 9 p. (Public Health Reprint 1907.) 5¢. Catalog No. T 27.6/a : 1907

Pulmonary tumors in mice:
1. Susceptibility of the lungs of albino mice to the carcinogenic action of 1, 2, 5, 6-dibenzanthracene. 1937. 9 pages. (Public Health Reprint 1803.) 5¢.
Catalog No. T 27.6/a : 1803

2, 3, and 4. *Exhausted.*

Relative importance of local and constitutional effects of methylcholanthrene in production of skin tumors in mouse. [1941.] p. 41–44. (Public Health Service, Reprint 4 from National Cancer Institute.) 5¢.
Catalog No. FS 2.31/a : 4

Spontaneous mammary tumors in mice, factors influencing the incidence of metastases. 1937. 14 p. il. (Public Health Reprint 1838.) 5¢.
Catalog No. T 27.6/a : 1838

Susceptibility of mice to spontaneous, induced, and transplantable tumors, comparative study of 8 strains. 1938. 19 p. (Public Health Reprint 1984.) 5¢.
Catalog No. T 27.6/a : 1984

Tumor clinic of the Baltimore Marine Hospital. 1941. 5 p. pl. (Public Health Service, Reprint 2212 from Public Health Reports.) 10¢.
Catalog No. FS 2.7/a : 2212

Tumors in mice injected with colloidal thorium dioxide. 1941. 5 p. il. (Public Health Service, Reprint 30 from Journal of National Cancer Institute.) 5¢.
Catalog No. FS 2.31/a : 30

Use of pure strain animals in studies on natural resistance to transplantable tumors. 1938. 11 p. (Public Health Reprint 1891.) 5¢.
Catalog No. T 27.6/a : 1891

See also Cancer.

2,2 BIS (P-CHLOROPHENYL). *See* DDT.

TYPHOID FEVER.

Bacteriostatic action of sulfadiazine on E. typhosa in carriers and cases. 1943. 8 p. (Public Health Service, Reprint 2479 from Public Health Reports.) 5¢.
Relates to typhoid fever.
Catalog No. FS 2.7/a : 2479

History and frequency of typhoid fever immunizations and cases in 9,000 families, based on nation-wide periodic canvasses, 1928–31. 1936. 30 p. il. (Public Health Service, Reprint 1758 from Public Health Reports.) 5¢.
Catalog No. T 27.6/a : 1758

Typhoid control program and results of 13 years' work in Williamson County, Tennessee, 1922–35. 1936. 15 p. (Public Health Service, Reprint 1725 from Public Health Reports.) 5¢.
Catalog No. T 27.6/a : 1725

Typhoid fever epidemic caused by oyster-borne infection, 1924–25. (Public Health Service, Supplement 50 to Public Health Reports.) 20¢.
Catalog No. T 27.6/2 : 50

Vaccine. 1, Deterioration of typhoid vaccine; 2, Standardization of gas gangrene antitoxin; 3, Potency of bacterial vaccines suspended in oil (lipovaccines). 1920. 45 p. il. (Public Health Service, Hygienic Laboratory Bulletin 122.) 10¢.
Catalog No. T 27.3 : 122

Vaccine. Laboratory method of determining the potency of typhoid vaccine. 1945. 15 p. il. (Public Health Service, Reprint 2587 from Public Health Reports.) 5¢.
Catalog No. FS 2.7/a : 2587

Viability of B. Typhosus in stored shell oysters. (Public Health Reprint 1005.) 5¢.
Catalog No. T 27.6/a : 1005

See also Diphtheria; Mortality; Physical impairments.

TYPHUS FEVER.

Apparent serological heterogeneity among strains of tsutsugamushi disease (scrub typhus). 1946. 6 p. (Public Health Service, Reprint 2682 from Public Health Reports.) 5¢.
Catalog No. FS 2.7/a : 2682

Clinical observations on endemic typhus (Brill's disease) in southern United States. (Public Health Reprint 1087.) 5¢.
Catalog No. T 27.6/a : 1087

Complement fixation in endemic typhus fever. 1941. 5 p. (Public Health Service, Reprint 2255 from Public Health Reports.) 5¢.
Catalog No. FS 2.7/a : 2255

Cross immunity between four strains of tsutsugamushi disease (scrub typhus). 1945. 4 p. il. (Public Health Service, Reprint 2645 from Public Health Reports.) 5¢.
Catalog No. FS 2.7/a : 2645

Cultivation of the rickettsiae of endemic (murine) and epidemic (European) typhus fever in vitro. 1937. 5 p. il. (Public Health Reprint 1863.) 5¢.
Catalog No. T 27.6/a : 1863

Distribution of endemic typhus (Brill's disease) in United States. (Public Health Reprint 1258.) 5¢.
Catalog No. T 27.6/a : 1258

Endemic typhus fever of southeastern United States, reaction of guinea pig. (Public Health Reprint 1271.) 5¢.
Catalog No. T 27.6/a : 1271

Endemic typhus of southeastern United States, reaction of white rat. (Public Health Reprint 1305.) 5¢.
Catalog No. T 27.6/a : 1305

Endemic typhus virus in mice. 1938. 5 p. (Public Health Reprint 1962.) 5¢.
Catalog No. T 27.6/a : 1962

Kill that flea! Help prevent typhus, cooperate in the D. D. T. dusting program. [1946.] [3] p. il. (Public Health Service.) 5¢.
Catalog No. FS 2.2 : T 98/2

Murine typhus fever control, typhus fever control unit of the United States Public Health Service. 1943. 9 p. (Public Health Service, Reprint 2473 from Public Health Reports.) 5¢.
Catalog No. FS 2.7/a : 2473

Specificity of complement fixation test in endemic typhus fever using a rickettsial antigen. 1941. 5 p. (Public Health Service, Reprint 2308 from Public Health Reports.) 5¢.
Catalog No. FS 2.7/a : 2308

TYPHUS FEVER—Continued.

Strain of typhus rickettsiae isolated from the brain of wild rat in California. 1944. 12 p. il. (Public Health Service, Reprint 2559 from Public Health Reports.) 5¢.
Catalog No. FS 2.7/a : 2559

Studies of typhus fever. 1945. 110 p. il. (Public Health Service, National Institute of Health Bulletin 183.) 20¢. Catalog No. FS 2.23 : 183

Study of the complement fixation and Weil-Felix reactions in wild rats as related to the isolation of the virus of endemic typhus. 1945. 18 p. (Public Health Service, Reprint 2597 from Public Health Reports.) 10¢.
Catalog No. FS 2.7/a : 2597

Susceptibility of animals to endemic typhus virus (second report). 1939. 2 p. (Public Health Reprint 2006.) 5¢. Catalog No. T 27.6/a : 2006

Tsutsugamushi disease (scrub typhus), the effects of an immune rabbit serum in experimentally infected mice. 1945. 6 p. (Public Health Service, Reprint 2663 from Public Health Reports.) 5¢. Catalog No. FS 2.7/a : 2663

Typhus fever, multiplication of virus of endemic typhus in rat flea Xenopsylla cheopis. (Public Health Reprint 1532.) 5¢. Catalog No. T 27.6/a : 1532

Typhus fever, transmission of endemic typhus by rubbing either crushed infected fleas or infected flea feces into wounds. (Public Health Reprint 1525.) 5¢.
Catalog No. T 27.6/a : 1525

Typhus fever: Typhus virus in feces of infected fleas (Xenopsylla cheopis) and duration of infectivity of fleas. (Public Health Reprint 1524.) 5¢.
Catalog No. T 27.6/a : 1524

Typhus fever, virus of typhus type derived from fleas collected from wild rates. (Public Health Reprint 1448.) 5¢.: Catalog No. T 27.6/a : 1448

Typhus-Rocky Mountain spotted fever group, an epidemiological and clinical study in the Eastern and Southeastern States. (Public Health Reprint 1453.) 5¢.
Catalog No. T 27.6/a : 1453

Vaccine.

Comparative potencies of several typhus vaccines. 1945. 8 p. (Public Health Service, Reprint 2629 from Public Health Reports.) 5¢.
Catalog No. FS 2.7/a : 2629

Epidemic and endemic typhus, protective value for guinea pigs of vaccines prepared from infected tissues of the developing chick embryo. [1940.] 6 p. (Public Health Service, Reprint 2130 from Public Health Reports.) 5¢.
Catalog No. FS 2.7/a : 2130

Tests of epidemic typhus vaccines. 1945. 4 p. (Public Health Service, Reprint 2625 from Public Health Reports.) 5¢.
Catalog No. FS 2.7/a : 2625

Weil-Felix reaction in endemic typhus fever and in Rocky Mountain spotted fever. (Public Health Reprint 1357.) 5¢. Catalog No. T 27.6/a : 1357

See also Brain reaction; Rats; Rocky Mountain spotted fever; Viruses.

ULCERATIVE CECITIS. Chronic ulcerative cecitis in rat. [1939.] 4 p. (Public Health Reprint 2029.) 5¢. Catalog No. T 27.6/a : 2029

UNDULANT FEVER.

Brucellosis (undulant fever). 1945. 3 p. (Public Health Service, Miscellaneous Publication 34.) 5¢. Catalog No. FS 2.29 :34

Incubation period in undulant fever. 1938. 7 p. (Public Health Reprint 1936.) 5¢. Catalog No. T 27.6/a : 1936

Studies on chronic brucellosis:

1. Introduction. 1937. 5 p. (Public Health Reprint 1844.) 5¢.
Catalog No. T 27.6/a : 1844

2. Description of techniques for specific tests. 1937. 9 p. il pl. (Public Health Reprint 1867.) 5¢. Catalog No. T 27.6/a : 1867

3–4. *Exhausted.*

V FACTOR. Determination of V factor in the urine and tissues of normal dogs and of dogs with blacktongue by the use of Hemophilus parainfluenzae. 1940. 11 p. (Public Health Reprint 2162.) 5¢. Catalog No. FS 2.7/a : 2162

VACCINATION.

History and frequency of smallpox vaccinations and cases in 9,000 families, based on nation-wide periodic canvasses, 1928–1931. 1936. 37 p. il. (Public Health Service, Reprint 1740 from Public Health Reports.) 5¢. Catalog No. T 27.6/a : 1740

Principal provisions of smallpox vaccination laws and regulations in the United States. 1941. 22 p. pl. (Public Health Service, Reprint 2227 from Public Health Reports.) 10¢. Catalog No. FS 2.7/a : 2227

Questions and answers on smallpox and vaccination. Rev. 1946. 28 p. il. (Public Health Service, Reprint 1137 from Public Health Reports.) 10¢. Catalog No. FS 2.7/a : 1137

Smallpox in relation to State vaccination laws and regulations. 1944. 8 p. (Public Health Service, Reprint 2528 from Public Health Reports.) 5¢. Catalog No. FS 2.7/a : 2528

Smallpox vaccination: Comparison of vaccines and techniques. 1939. 16 p. (Public Health Reprint 2078.) 5¢. Catalog No. T 27.6/a : 2078

Status of vaccination in American colleges. 1925. 5 p. (Public Health Service, Reprint 1013 from Public Health Reports.) 5¢. Catalog No. T 27.6/a : 1013

Vaccination of monkeys against pneumococcus type I pneumonia by means of intratracheal injection of pneumococcus type I vaccine. (Public Health Service, Reprint 796 from Public Health Reports.) 5¢. Catalog No. T 27.6/a : 796

See also Tetanus.

VACCINE.

Pathology of generalized vaccinia in rabbits. (National Institute of Health Bulletin 156.) 70¢. Catalog No. T 27.3 : 156

Prophylactic value of single dose of precipitated pertussis vaccine, preliminary report. 1938. 4 p. (Public Health Reprint 1935.) 5¢. Catalog No. T 27.6/a : 1935

Selection of heat-resistant strain of vaccine virus (rabbit testicular). (Public Health Reprint 1283.) 5¢. Catalog No. T 27.6/a : 1283

See also Cholera; Infantile paralysis; Pneumococci; Pneumonia; Rabies; Smallpox; Typhoid fever; Typhus fever; Venereal diseases; Yellow fever.

VENEREAL DISEASES.

Acetarsone in treatment of congenital syphilis, review of literature. [1942.] 92 p. (Public Health Service, Supplement 18 to Venereal Disease Information.) 15¢. Catalog No. FS 2.10 : 18

Address at annual meeting American Social Hygiene Association, Feb. 1, 1940. 4 p. (Reprint 127 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 127

Analysis of case-finding methods in community venereal disease control. 1945. 11 p. il. (Public Health Service, Reprint 242 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 242

Antigens. Comparative study of antigens of human pus, mouse brain, and chick embryo for the diagnosis of lymphogranuloma venereum. 1943. 4 p. (Public Health Service, Reprint 195 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 195

Antigens. Purification of antigen for microscopic slide precipitation tests for syphilis. 1941. 3 p. (Public Health Service, Reprint 143 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 143

Antigens. Purification of antigen of syphilis. 1941. 3 p. (Public Health Service, Reprint 147 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 147

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VENEREAL DISEASES—Continued.

Arsphenamine-sodium thiosulphate treatment of experimental syphilis. (Public Health Reprint 1152.) 5¢. Catalog No. T 27.6/a : 1152

Biochemistry of the gonococcus and its practical importance. 1941. 5 p. (Public Health Service, Reprint 152 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 152

Blindness. Cost and loss from syphilitic blindness in the United States. 1939. 5 p. [Reprint 110 from Venereal Disease Information.] 5¢. Catalog No. T 27.26/a : 110

Cardiolipin antigens in the Kolmer complement fixation test for syphilis. 1944. 9 p. il. (Public Health Service, Reprint 232 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 232

Chance of acquiring syphilis and the frequency of its disastrous outcome. 1939. 9 p. il. [Reprint 99 from Venereal Disease Information.] 5¢. Catalog No. T 27.26/a : 99

Chemotherapy. Newer chemotherapy of venereal diseases, symposium. 1941. 42 p. il. (Public Health Service, Supplement 13 to Venereal Disease Information.) 10¢. Catalog No. FS 2.10 : 13

Chemotherapy. Treatment of syphilis, artificial fever combined with chemotherapy. 1942. 51 p. il. (Public Health Service, Supplement 16 to Venereal Disease Information.) 10¢. Catalog No. FS 2.10 : 16

Civilians, soldiers, and the chemical prophylaxis of venereal diseases. 1942. 3 p. (Public Health Service, Reprint 185 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 185

Coast Guard. Study of syphilis in the Coast Guard. 1937. 8 p. (Public Health Service, Reprint 1842 from Public Health Reports.) 5¢. Catalog No. T 27.6/a : 1842

Coast Guard. Venereal disease among Coast Guard enlisted personnel during fiscal year 1929. 1931. 16 p. il. (Public Health Service, Reprint 1430 from Public Health Reports.) 5¢. Catalog No. T 27.6/a : 1430

—— Same 1930. 1931. 6 p. (Public Health Service, Reprint 1482 from Public Health Reports.) 5¢. Catalog No. T 27.6/a : 1482

Combined artificial fever and aldersone in treatment of neurosyphilis. 1944. 8 p. (Public Health Service, Reprint 218 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 218

Common error in obtaining specimens for the cultural diagnosis of gonococcal infections in women. 1940. 3 p. il. (Reprint 137 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 137

Comparison of case-finding methods in a syphilis control program. 1943. 8 p. (Public Health Service, Reprint 193 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 193

Comparison of results obtained with culture of urine and urethral secretion in the detection of gonorrhea. 1943. 4 p. (Public Health Service, Reprint 207 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 207

Contact investigation as a case-finding instrument. 1945. 8 p. (Public Health Service, Reprint 244 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 244

Continuous and intermittent treatment for early syphilis, a critical review of the American and League of Nations investigations, with additional evaluations. 1937. 18 p. (Public Health Service, Reprint 63 from Venereal Disease Information.) 5¢. Catalog No. T 27.26/a : 63

Control of syphilis, a symposium. 1936. 70 pages, illus. (Public Health Service, Supplement 2 to Venereal Disease Information.) 10¢. Catalog No. T 27.26/2 : 2

Control of venereal diseases. 1938. 8 p. il. [Reprint 84 from Venereal Disease Information.] 5¢. Catalog No. T 27.26/a : 84

Cooperative clinical studies in the treatment of syphilis: Tabes dorsalis. 1939. 30 p. il. [Reprint 100 from Venereal Disease Information.] 5¢. Catalog No. T 27.26/a : 100

VENEREAL DISEASES—Continued.

Criteria of cure in gonorrhea. 1944. 8 p. (Public Health Service, Reprint 216 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 216

Culture method in diagnosis of gonorrhea. 1940. 8 p. (Reprint 126 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 126

Curative action of sulpharsphenamine in experimental syphilis. (Public Health Reprint 857.) 5¢.
Catalog No. T 27.6/a : 857

Delayed planting of gonococcus cultures, preliminary report. 1942. 2 p. (Public Health Service, Reprint 181 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 181

Diagnosis of gonorrhea in women, collection of material for laboratory examination. 1945. 7 p. il. (Public Health Service, VD Bulletin 97.) 5¢.
Catalog No. FS 2.11 : 97

Diagnosis of syphilis by the general practitioner. 1938. 36 p. il. (Public Health Service, Supplement 5 to Venereal Disease Information.) 10¢.
Catalog No. T 27.26/2 : 5

Direct cost of treating syphilis and gonorrhea in New York City. 1938. 12 p. [Reprint 97 from Venereal Disease Information.] 5¢.
Catalog No. T 27.26/a : 97

Directory of clinics for the diagnosis and treatment of venereal diseases. Rev. 1944. 59 p. (Public Health Service, Supplement 4 to Venereal Disease Information.) 15¢.
Catalog No. FS 2.10 : 4

Directory of venereal disease clinics for foreign seamen. 1943. 18 p. (Public Health Service, Supplement 4–A to Venereal Disease Information.) 10¢.
Catalog No. FS 2.10 : 4–A

Economic cost of paresis in the United States. 1945. 10 p. (Public Health Service, Reprint 247 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 247

Efficiency of State and local laboratories in the performance of serodiagnostic tests for syphilis. 1937. 8 p. [Reprint 61 from Venereal Disease Information.] 5¢.
Catalog No. T 27.26/a : 61

Evaluating a serologic test for syphilis in a metropolitan community. 1941. 6 p. (Public Health Service, Reprint 155 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 155

Evaluation of the blood-dye diluent for transportation of material from gonococcic infections. 1944. 6 p. (Public Health Service, Reprint 223 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 223

Evaluation of performance of serologic tests for syphilis in Georgia, 1939. 1940. 5 p. (Reprint 128 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 128

Evaluation of serodiagnostic tests for syphilis in the United States, report of results. 1935. 14 p. [Reprint 52 from Venereal Disease Information.] 5¢.
Catalog No. T 27.26/a : 52

Evaluation of serodiagnostic tests for syphilis upon the spinal fluid. 1937. 11 p. il. [Reprint 66 from Venereal Disease Information.] 5¢.
Catalog No. T 27.26/a : 66

Experimental evaluation of intensive methods for treatment of early syphilis:

1. Toxicity and excretion. 1943. 12 p. (Public Health Service, Reprint 196 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 196

2. Therapeutic efficacy and margin of safety. 1943. 11 p. il. (Public Health Service, Reprint 197 from Venereal Disease Information.) 5¢
Catalog No. FS 2.9/a : 197

3. *Exhausted.*

Experimental syphilis lymph gland transfer method of determining human infection with Treponema pallidum. (Hygienic Laboratory Bulletin 157.) 10¢.
Catalog No. T 27.3 : 157

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VENEREAL DISEASES—Continued.

Extragenital chancroid. 1941. 2 p. (Public Health Service, Reprint 151 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 151

Facilitation process and venereal disease control, study of source finding and suppression of facilitation in the greater Vancouver area. 1943. 12 p. il. (Public Health Service, Reprint 208 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 208

Fitness for freedom. 1943. 5 p. (Public Health Service, Reprint 204 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 204

Folders. [Venereal disease folders] : (Public Health Service.)

1. *Exhausted.*

2. Syphilis and your town. [1939.] [2] p. il. 5¢. Catalog No. T 27.43 : 2

3. You can end this sorrow [she lost her baby]. [1941.] 8 p. il. 5¢. Catalog No. FS 2.32 : 3

4–6. *Exhausted.*

7. Venereal disease and national defense. [1941.] [8] p. il. 5¢. Catalog No. FS 2.32 : 7

Frequency of positive serologic tests for syphilis in relation to occupation and marital status among men of draft age. 1945. 8 p. il. (Public Health Service, Reprint 240 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 240

Gonococcal infection in the female. 1941. 8 p. (Public Health Service, Reprint 163 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 163

Gonococcal vaginitis. 1940. 13 p. (Reprint 133 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 133

Gonorrhea, the epidemic we face. 1944. 5 p. (Public Health Service, Reprint 219 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 219

Health departments. Recommendations for venereal disease control program in State and local health departments, report of advisory committee to Public Health Service. 1936. 16 p. (Public Health Service, Reprint 54 from Venereal Disease Information.) 5¢. Catalog No. T 27.26/a : 54

Health departments. Syphilis of circulatory system, compilation of abstracts from Division of Venereal Diseases; issued by Public Health Service for use in its cooperative work with State health departments. 1927. 102 p. (Public Health Service, Compilation 6.) 20¢. Catalog No. T 27.29 : 6

Health departments. Venereal disease control programs of the State departments of health. 1936. 33 p. (Public Health Service, Reprint 56 from Venereal Disease Information.) 10¢. Catalog No. T 27.26/a : 56

Health officials. State and Territorial health officers consider problem of venereal disease control. [1945.] 8 p. il. (Public Health Service, Reprint 246 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 246

Hearings, 78th Cong., 1st sess., on S. 1250, to repeal sec. 2 of the Act, approved May 17, 1926, which provides for the forfeiture of pay of persons in the military and naval service of the United States who are absent from duty on account of the direct effects of venereal disease due to misconduct, June 24 and 30, 1943. 1943. 12 p. (Military Affairs Committee, Senate.) 5¢. Catalog No. Y 4.M 59/2 : V 55

Hospital, clinic, and laboratory costs of syphilis in Buffalo, N. Y., with a comparison of similar costs in Baltimore, Md. 1939. 12 p. [Reprint 108 from Venereal Disease Information.] 5¢. Catalog No. T 27.26/a : 108

Illegal and unethical practices in the diagnosis and treatment of syphilis and gonorrhea. 1940. 10 p. il. (Public Health Service, Reprint 122 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 122

Importance of diagnosis of gonorrhea in the woman in the control of this disease. 1943. 4 p. (Public Health Service, Reprint 198 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 198

VENEREAL DISEASES—Continued.

Importance of treatment in control of congenital syphilis. 1938. 5 p. (Public Health Service, Reprint 88 from Venereal Disease Information.) 5¢.
Catalog No. T 27.26/a :88

Improvement of present methods for extrafamilial contact tracing. 1944. 5 p. (Public Health Service, Reprint 215 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 215

Incidence of syphilitic aortitis in seamen and landsmen. 1934. 12 p. (Public Health Service, Reprint 44 from Venereal Disease Information.) 5¢.
Catalog No. T 27.26/a : 44

Indications for therapeutic malaria in the various forms of neurosyphilis. 1941. 4 p. (Public Health Service, Reprint 161 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 161

Interstate evaluation study of serologic methods, 1942. 1942. 5 p. (Public Health Service, Reprint 189 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 189

Interstitial keratitis standardization of treatment. 1941. 16 p. il. (Public Health Service, Reprint 162 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 162

Kahn reaction in blood serum of normal and syphilitic guinea pigs. 1931. 4 p. [Reprint 33 from Venereal Disease Information.] 5¢.
Catalog No. T 27.26/a : 33

Laboratory procedures in the diagnosis of gonococcal infection. 1934. 11 p. il. (Public Health Service, Reprint 201 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 201

Law enforcement in venereal disease control from the standpoint of the health officer. 1942. 10 p. (Public Health Service, Reprint 191 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 191

Limited survey of public opinion on syphilis. 1941. 7 p. (Public Health Service, Reprint 140 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 140

Making gold sol for cerebrospinal fluid tests. 1939. 2 p. [Reprint 107 from Venereal Disease Information.] 5¢.
Catalog No. T 27.26/a : 107

Malaria and artificial fever in the treatment of paresis. 1941. 10 p. (Public Health Service, Reprint 136 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 136

Male investigator in venereal disease control follow-up. 1943. 6 p. (Public Health Service, Reprint 210 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 210

Management of chancroid granuloma inguinale and lymphogranuloma venereum in general practice. 1943. 43 p. (Public Health Service, Supplement 19 to Venereal Disease Information.) 15¢.
Catalog No. FS 2.10 : 19

Management of gonorrhea in general practice, Executive Committee, American Neisserian Medical Society. 1942. 15 p. il. (Public Health Service, Reprint 174 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 174

Management of gonorrhea in general practice, Executive Committee, American Neisserian Medical Society. 1943. 8 p. (Public Health Service, Reprint 200 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 200

Management of syphilis in general practice. Rev. 1939. 61 p. il. (Public Health Service, Supplement 6 to Venereal Disease Information.) 10¢.
Catalog No. FS 2.10 : 6

Mapharsen. One-day treatment of syphilis with fever and mapharsen. 1944. 5 p. (Public Health Service, Reprint 220 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 220

Mapharsen. Toxic dose of mapharsen given by continuous drip method. 1941. 10 p. il. (Public Health Service, Reprint 154 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 154

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VENEREAL DISEASES—Continued.

Mapharsen. Toxic dose of mapharsen given in interrupted doses. 1942. 5 p. il. (Public Health Service, Reprint 167 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 167

Mazzini microscopic flocculation test for syphilis. 1942. 8 p. (Public Health Service, Reprint 175 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 175

Mechanical tabulating system in venereal disease control. 1940. 7 p. (Reprint 125 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 125

Medical officer and the venereal disease education of the soldier. 1945. 7 p. (Public Health Service, Reprint 236 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 236

Method of inducing therapeutic fever with typhoid vaccine using the intravenous drip technic. 1943. 8 p. (Public Health Service, Reprint 211 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 211

Methods of transporting gonococci to laboratories for cultural studies. 1944. 4 p. (Public Health Service, Reprint 226 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 226

Modern serologic tests for syphilis and their interpretation by the physician. 1941. 81 p. (Public Health Service, Supplement 14 to Venereal Disease Information.) 15¢.
Catalog No. FS 2.10 : 14

Modification of the horse plasma hemoglobin agar for primary culture of the gonococcus, usefulness of Nile blue A in this medium. 1942. 3 p. (Public Health Service, Reprint 180 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 180

Negroes. Syphilis in the Negro, handbook for the general practitioner. 1942. 96 p. pl. (Public Health Service, Supplement 15 to Venereal Disease Information.) 20¢.
Catalog No. FS 2.10 : 15

Negroes. Tentative death curve for acquired syphilis in white and colored males in the United States. 1937. 9 p. il. (Public Health Service, Reprint 71 from Venereal Disease Information.) 5¢. Catalog No. T 27.26/a : 71

Negroes. Treatment of induced malaria in Negro paretics with mapharsen and tryparsamide. 1939. 4 p. (Public Health Service, Reprint 2094 from Public Health Reports.) 5¢.
Catalog No. FS 2.7/a : 2094

Negroes. Untreated syphilis in the male Negro. 1936. 6 p. (Public Health Service, Reprint 59 from Venereal Disease Information.) 5¢.
Catalog No. T 27.26/a : 59

New cases of syphilis and gonorrhea in States, Territories, possessions, Panama Canal Zone, and cities of 200,000 population and over, statistical reports for fiscal years 1943–44 and 1942–43. 1944. 3 p. (Public Health Service, Reprint 234 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 234

Organization and function of follow-up service in venereal disease clinics. 1938. 5 p. (Public Health Service, Reprint 93 from Venereal Disease Information.) 5¢.
Catalog No. T 27.26/a : 93

Physicians. Cooperation of the private physician in the control of prenatal syphilis. 1938. 2 p. (Public Health Service, Reprint 86 from Venereal Disease Information.) 5¢.
Catalog No. T 27.26/a : 86

Physicians. Private physician today in the control of the venereal diseases. 1942. 3 p. (Public Health Service, Reprint 173 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 173

Physicians. Service provided physicians by the health department. 1938. 4 p. (Public Health Service, Reprint 89 from Venereal Disease Information.) 5¢.
Catalog No. T 27.26/a : 89

Physicians. Study of consultation by correspondence in syphilis, 2,000 questions the doctor asks about syphilis. 1940. 28 p. (Public Health Service, Reprint 129 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 129

VENEREAL DISEASES—Continued.

Possibility of predicting future needs in venereal disease control, study of effects of mobilization on case load in District of Columbia clinics. 1945. 8 p. il. (Public Health Service, Reprint 250 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 250

Postarsenical dermatitis with histamine. 1943. 3 p. (Public Health Service, Reprint 194 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 194

[Posters on syphilis control.] [1937.] 6 posters, each 19.5 × 15 in. 75¢ per set of 6 posters. Catalog No. T 27.19 : Sy 7/no.1–6

1. Syphilis kills babies, control syphilis.
2. Competent medical care *vs.* self-treatment.
3. Danger! syphilis wrecks marriage.
4. Duties of health department in syphilis control.
5. Syphilis strikes 1 out of 100 adults.
6. Acquired syphilis.

Posters. [Venereal disease posters.] Public Health Service. Catalog No. FS 2.27 : (no.)

7–R. No home remedy or quack doctor ever cured syphilis or gonorrhea, see your doctor or local health officer. [1941.] 18.3 x 14.2 in. 5¢.

8–10. *Exhausted.*

11. Blood test for everyone, only sure check. [1941.] 28 x 22 in. 5¢.

12. *Exhausted.*

13. Know for sure, get blood test for syphilis. [1941.] 28 x 22 in. 5¢.

14. Make our men as fit as our machines. [1941.] 18.3 x 14.2 in. 5¢.

15. No home remedy ever cured gonorrhea. [1942.] 28 x 22 in. 5¢.

16. Prostitution spreads syphilis and gonorrhea. [1942.] 18.3 x 14.2 in. 5¢.

17. Know for sure, get blood tests before marriage. 1944. 18 x 14.2 in. 5¢.

Postgraduate course in syphilis control. 1939. 4 p. [Reprint 113 from Venereal Disease information.] 5¢. Catalog No. T 27.26/a : 113

Preliminary report of blood testing, as required by Alabama law, in first 3 counties surveyed. [1945.] 4 p. (Public Health Service, Reprint 231 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 231

Preservation of gonococcus in frozen urines and broth. 1941. 3 p. (Public Health Service, Reprint 156 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 156

Presidential address, American Medical Association, 1876. 1933. 13 p. [Reprint 98 from Venereal Disease Information.] 5¢. Catalog No. T 27.26/a : 98

Relates to the control of syphilis.

Principles of venereal disease control. 1942. 105 p. (Public Health Service, Supplement 17 to Venereal Disease Information.) 20¢. Catalog No. FS 2.10 : 17

Progress in the control of venereal diseases in Virginia. 1941. 12 p. il. (Public Health Service, Reprint 150 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 150

Progress in venereal disease control during fiscal year 1939. 1940. 3 p. (Reprint 121 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 121

Progress in venereal disease control in the States, June 30, 1938. 1939. 3 p. [Reprint 103 from Venereal Disease Information.] 5¢. Catalog No. T 27.26/a : 103

Progress in venereal disease control in the United States, July 1, 1937. 1938. 4 p. (Public Health Service, Reprint 79 from Venereal Information.) 5¢. Catalog No. T 27.26/a : 79

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Progress in wartime management of gonorrhea. 1944. 4 p. (Public Health Service, Reprint 217 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 217

Prophylaxis, report of Special Joint Committee. 1940. 3 p. (Public Health Service, Reprint 138 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 138

Quantitative serologic studies in early syphilis: 1, Treatment with artificial fever alone; 2, Treatment with artificial fever combined with chemotherapy; 3, Treatment with a single intensive session of combined fever-chemotherapy. 1942. 13 p. il. (Public Health Service, Reprint 192 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 192

Relief and prevention of venereal diseases. (V. D. Pamphlet 80.) 5¢.
Catalog No. T 27.20 : 80

Requirements of premarital legislation. 1943. 3 p. (Public Health Service, Reprint 199 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 199

Requirements of premarital legislation. 1945. 20 p. (Public Health Service, V. D. Bulletin 98.) 10¢.
Catalog No. FS 2.11 : 98

Summary of provisions and requirements of the statutes in force in the various States in regard to premarital physical examinations and blood tests as they relate to venereal diseases.

Results of the follow-up of patients treated for early syphilis by rapid methods at Bellevue Hospital. 1943. 4 p. (Public Health Service, Reprint 206 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 206

Role of open houses of prostitution in spread of venereal diseases in cantonment area. 1942. 7 p. (Public Health Service, Reprint 169 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 169

San Francisco industrial venereal disease educational and case-finding program. 1946. 12 p. (Public Health Service, Reprint 254 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 254

Serial examinations in epidemiology of gonococcal infections. 1944. 2 p. (Public Health Service, Reprint 213 from venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 213

Serodiagnostic tests as performed in State laboratories, 1938–39. 1940. 13 p. (Reprint 130 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 130

Serodiagnostic tests for syphilis in 39 State laboratories. 1937. 7 p. [Reprint 72 from Venereal Disease Information.] 10¢.
Catalog No. T 27.26/a : 72

Serologic consultation service. 1940. 4 p. (Reprint 124 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 124

Serologic reactions for syphilis in blood transfusion donors. 1939. 4 p. [Reprint 105 from Venereal Disease Information.] 5¢.
Catalog No. T 27.26/a : 105

Serologic survey and venereal disease educational program at the San Francisco county jail. 1945. 8 p. (Public Health Service, Reprint 239 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 239

Severe reactions to arsphenamine. 1941. 6 p. (Public Health Service, Reprint 144 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 144

Significance of the first lapse in out-patient venereal disease clinics. 1945. 4 p. il. (Public Health Service, Reprint 248 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 248

Simple method of determining attendance and delinquency in a syphilis clinic. 1938. 4 p. il. (Public Health Service, Reprint 102 from Venereal Disease Information.) 5¢.
Catalog No. T 27.26/a : 102

Social and legal problems in wartime venereal disease control program. 1943. 5 p. (Public Health Service, Reprint 202 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 202

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Social hygiene. 1941. 9 p. (Public Health Service, Reprint 142 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 142

Sociologic analysis of 304 female patients admitted to the Midwestern Medical Center, St. Louis, Mo. 1944. 8 p. il. (Public Health Service, Reprint 228 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 228

Sodium thiosulfate. Effect of sodium thiosulfate on excretion of arsenic. 1941. 6 p. il. (Public Health Service, Reprint 153 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 153

Some general considerations affecting present-day sex and sex education problems. 1944. 8 p. (Public Health Service, Reprint 225 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 225

Spirochete complement fixation reaction compared with the Eagle and Wassermann procedures. 1940. 7 p. (Reprint 123 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 123

Spirochete counts in early syphilis. 1939. 5 p. (Reprint 119 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 119

Spontaneous healing and progression in untreated venereal lymphogranuloma. 1941. 6 p. (Public Health Service, Reprint 159 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 159

State-wide gonococcus culture service, system utilizing the mail for transmission of specimens. 1945. 4 p. (Public Health Service, Reprint 240 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 240

Statement on prostitution in venereal disease control. 1942. 4 p. (Public Health Service, Reprint 179 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 179

Storage of syphilitic serums. 1942. 4 p. (Public Health Service, Reprint 172 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 172

Study of amount of active syphilis found in group of newly inducted soldiers. 1944. 4 p. (Public Health Service, Reprint 221 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 221

Study of delinquent syphilis patients in the Memphis-Shelby County Venereal disease control program. 1942. 10 p. (Public Health Service, Reprint 186 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 186

Substitutes for spinal fluids as colloidal gold controls. 1943. 4 p. (Public Health Service, Reprint 205 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 205

Sulfarsphenamine in therapy of syphilis, comparative study of toxic manifestations of neoarsphenamine and sulfarsphenamine. 1944. 20 p. (Public Health Service, Reprint 2561 from Public Health Reports.) 5¢. Catalog No. FS 2.7/a : 2561

Sulfathiazole treatment of gonococcal infection in 360 patients. 1942. 7 p. il. (Public Health Service, Reprint 166 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 166

Sulfonamides and fever therapy in treatment of gonorrhea in the male. 1942. 6 p. il. (Public Health Service, Reprint 171 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 171

Survey of venereal diseases in District of Columbia. 1940. 11 p. (Public Health Service, Reprint 134 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 134

Survival time of gonococcus in urine from male patients with urethritis. 1942. 4 p. (Public Health Service, Reprint 184 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 184

Symptomatic neurosyphilis. 1942. 18 p. il. (Public Health Service, Reprint 190 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 190

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Syphilis and gonorrhea control. 1941. 10 p. (Public Health Service, Reprint 149 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 149

Syphilis control in a State prison: 1, Plan for treatment; 2, Role of prison in effecting adequate treatment. 1942. 7 p. (Public Health Service, Reprint 176 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 176

Syphilis control through mass blood testing. 1945. 4 p. il. (Public Health Service, Reprint 243 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 243

Syphilis epidemiology applied, fifteen years' experience with contact-tracing and case holding in New Jersey. 1938. 13 p. [Reprint 83 from Venereal Disease Information.] 5¢. Catalog No. T 27.26/a : 83

Syphilis in a large industrial organization. 1936. 3 p. (Public Health Service, Reprint 57 from Venereal Disease Information.) 5¢. Catalog No. T 27.26/a : 57

Syphilis in mother and child. 1940. 20 p. (Public Health Service, Supplement 7 to Venereal Disease Information.) 10¢. Catalog No. FS 2.10 : 7

Syphilis in pregnancy, cooperative clinical studies in the treatment of syphilis. 1936. 8 pages. [Reprint 46 (summarized) from Venereal Disease Information.] 5¢. Catalog No. T 27.26/a : 46/sum.

Syphilis in selective service registrants determination of prevalence and plan of rehabilitation of proven cases. 1942. 8 p. (Public Health Service, Reprint 170 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 170

Syphilis-malaria survey, Onslow County, North Carolina. 1941. 11 p. il. (Public Health Service, Reprint 158 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 158

Syphilis study project, Logan County, West Virginia. 1942. 10 p. (Public Health Service, Reprint 168 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 168

Technic of induced malaria as used in the South Carolina State Hospital. 1941. 6 p. (Public Health Service, Reprint 160 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 160

Traveling clinic. 1937. 1 p. il. (Public Health Service, Reprint 75 from Venereal Disease Information.) 5¢. Catalog No. T 27.26/a : 75

Treatment of induced malaria in Negro paretics with mapharsen and tryparsamide. 1939. 4 p. (Public Health Service, Reprint 2094 from Public Health Reports.) 5¢. Catalog No. FS 2.7/a : 2094

Treament of neurosyphilis by continuous infusion of typhoid vaccine. 1945. 8 p. il. (Public Health Service, Reprint 238 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 238

Trend in age of acquiring venereal disease in New York City, 1940–1943. 1944. 5 p. il. (Public Health Service, Reprint 233 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 233

Trichomonas urethritis and protatitis, preliminary report on incidence and analysis of 44 cases of this common venereal infection. 1944. 4 p. (Public Health Service, Reprint 224 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 224

Tryparsamide in the treatment of syphilis. 1939. 30 p. (Public Health Service, Reprint 118 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 118

Tuberculosis. Effect of tuberculosis on serologic reactions for syphilis. 1939. 5 p. (Public Health Service, Reprint 104 from Venereal Disease Information.) 5¢. Catalog No. T 27.26/a : 104

Uncomplicated syphilitic aortitis, can it be diagnosed? 1942. 9 p. (Public Health Service, Reprint 183 from Venereal Disease Information.) 5¢. Catalog No. FS 2.9/a : 183

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United States Public Health Service evaluation of massive arsenotherapy for syphilis, cooperating clinics of New York and midwestern groups. [1945.] 9 p. (Public Health Service, Reprint 230 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 230

Value of consultation service in syphilis clinics. 1938. 4 p. (Public Health Service, Reprint 85 from Venereal Disease Information.) 5¢.
Catalog No. T 27.26/a : 85

Venereal disease and Selective Service. 1944. 6 p. (Public Health Service, Reprint 214 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 214

Venereal disease case reporting, New York City, 1941. 1942. 2 p. (Public Health Service, Reprint 188 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 188

Venereal disease contact-tracing in Camden, N. J. 1939. 10 p. (Public Health Service, Reprint 115 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 115

Venereal disease control program in Georgia. 1940. 3 p. (Public Health Service, Reprint 132 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 132

Venereal disease epidemiology in the Army Third Service Command, progress report for period:

Jan.-June 1943. 8 p. il. (Public Health Service, Reprint 209 from Venereal Disease Information.) 5¢.
Catalog No. FS 2.9/a : 209

July–Dec. 1943. 4 p. (Public Health Service, Reprint 229 from Venereal Information.) 5¢.
Catalog No. FS 2.9/a : 229

Venereal disease information. [Monthly.] Subscription, 50¢ a year; foreign subscription, 75¢ a year; single copy, 5¢.
Catalog No. FS 2.9:

See also Conferences; Heart disease; Pencillin; Public health.

VENTILATION. Study of rural school ventilation, the school ventilation study in Cattaraugus County, N. Y., 1926–27. 1930. 28 p. il. (Public Health Service, Reprint 1320 from Public Health Reports.) 10¢.
Catalog No. T 27.6/a : 1320

See also Bacteria.

VETERANS' BUREAU MEDICAL BULLETIN. *See* Medical Bulletin of Veterans' Administration.

VIBRIO CHOLERAE. Use of mucin in experimental infections of mice with Vibrio cholerae. 1942. 3 p. (Public Health Service, Reprint 2377 from Public Health Reports.) 5¢.
Catalog No. FS 2.7/a : 2377

VIBRION SEPTIQUE.

Experimental pathology and pathologic histology produced by the toxin of Vibrion septique in animals. 1936. 46 p. 10 p. of pl. (National Institute of Health Bulletin 168.) 10¢.
Catalog No. T 27.3 : 168

Studies on the standardization of Vibrion septique antitoxin. 1934. 12 p. (Public Health Reprint 1617.) 5¢.
Catalog No. T 27.6/a : 1617

VIRUSES.

Biological products, establishments licensed for the propagation and sale of viruses, serums, toxins, and analogous products. 1939. 8 p. (Public Health Service, Reprint 2065 from Public Health Reports.) 5¢.
Catalog No. T 27.6/a : 2065

Biological products, establishments licensed for the propagation and sale of viruses, serums, toxins, and analogous products. 1943. 7 p. (Public Health Service, Reprint 2424 from Public Health Reports.) 5¢.
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Biological products, establishments licensed for the preparation and sale of viruses, serums, toxins, and analogous products. 1945. 7 p. (Public Health Service, Reprint 2661 from Public Health Reports.) 5¢.
Catalog No. FS 2.7/a : 2661

Persistence of the viruses of endemic (murine) typhus, Rocky Mountain spotted fever, and boutonneuse fever in tissues of experimental animals. 1938. 6 p. (Public Health Service, Reprint 1961 from Public Health Reports.) 5¢.
Catalog No. T 27.6/a : 1961

Preservation of lymphocytic choriomeningitis and St. Louis encephalitis viruses by freezing and drying in vacuo. 1939. 2 p. (Public Health reprint 2082.) 5¢.
Catalog No. T 27.6/a : 2082

Regulations for sale of viruses, serums, toxins, and analogous products in District of Columbia and in interstate traffic, approved Oct. 12, 1940. [1941.] 11 p. (Public Health Service, Miscellaneous Publication 10.) 5¢.
Catalog No. FS 2.29 : 10

See also Chemotherapy; Encephalitis; Guinea pigs; Infantile paralysis; Meningitis; Mumps; Pneumonia; Rabies; Rocky Mountain spotted fever; Typhus fever.

VITAL RECORDS BUREAU. Hearings, 78th Cong., 2d sess., on S. 1096, to establish Bureau of Vital Records in United States, Public Health Service, and for other purposes, Jan. 13, 1944. 1944. 52 p (Commerce Committee, Senate.) 10¢.
Catalog No. Y 4.C 73/2 : V 83

VITAL STATISTICS.

General censuses and vital statistics in the Americas, an annotated bibliography of the historical censuses, and current vital statistics of the 21 American republics, the American sections of the British Commonwealth of Nations, the American colonies of Denmark, France, and the Netherlands, and the American Territories and possessions of the United States. 1943. 151 p. (Census Bureau.) Cloth, 65¢.
Catalog No. C 3.2 : C 33/10

Measures relating to vital records and vital statistics, message from President [Roosevelt] transmitting report of Bureau of Budget on measures relating to vital records and vital statistics. 1943. 264 p. il. pl. (78th Cong., 1st sess., H. doc. 242.) 35¢.
Catalog No. 78-1 : H.doc.242

Vital statistics of the United States, 1937: (Census Bureau.)
Catalog No. C 3.139 : 937/(pt.)

Pt. 1. Natality and mortality data for the United States tabulated by place of occurrence with supplemental tables for Hawaii, Puerto Rico, and the Virgin Islands. 1939. 616 p. Cloth, $2.00

Pt. 2. Natality and mortality data for the United States tabulated by place of residence. 1939. 186 p. Cloth, $1.25.

Vital statistics of the United States, 1938: (Census Bureau.)
Catalog No. C 3.139 : 938/(pt.)

Pt. 1. Natality and mortality data for the United States tabulated by place of occurrence with supplemental tables for Hawaii, Puerto Rico, and the Virgin Islands. 1940. 583 p. Cloth, $1.75.

Pt. 2. Natality and mortality data for the United States tabulated by place of residence. 1940. 205 p. Cloth, $1.25.

Vital statistics of the United States, 1939: (Census Bureau.)
Catalog No. C 3.139 : 939/(pt.)

Pt. 1. Natality and mortality data for the United States tabulated by place of occurrence with supplemental tables for Hawaii, Puerto Rico, and the Virgin Islands. 1941. 531 p. Cloth, $1.50.

Pt. 2. Natality and mortality data for the United States, tabulated by place of residence. 1941. 283 p. Cloth, $1.25.

Prior to 1937, vital statistics data were published annually in two volumes, Mortality statistics and Birth, stillbirth, and infant mortality statistics.

VITAL STATISTICS—Continued.

Vital statistics of the United States, 1940: (Census Bureau.)
Catalog No. C 3.139: 940/(pt.)

Pt. 1. Natality and mortality data for the United States tabulated by place of occurrence with supplemental tables for Hawaii, Puerto Rico, and the Virgin Islands. 1943. 657 p. Cloth, $2.00.

Pt. 2. Natality and mortality data for the United States tabulated by place of residence. 1943. 334 p. Cloth, $1.25.

Pt. 3, supplement. Natality and mortality data for counties and cities in the United States tabulated by place of residence, 2-year totals, 1939–1940. 1943. 581 p. Cloth, $1.75.

Vital statistics of the United States, 1941: (Census Bureau.)
Catalog No. C 3.139: 941/(pt.)

Pt. 1. Natality and mortality data for the United States tabulated by place of occurrence with supplemental tables for Hawaii and Puerto Rico. 1943. 244 p. Cloth, $1.50.

Pt. 2. Natality and mortality data for United States, tabulated by place of residence. 1943. 564 p. Cloth, $2.00.

Vital statistics of the United States, 1942: (Census Bureau.)
Catalog No. C 3.139: 942/(pt.)

Pt. 1. Natality and mortality data for United States tabulated by place of occurrence with supplemental tables for Hawaii, Puerto Rico, and the Virgin Islands. 1944. 176 p. Cloth, $1.25.

Pt. 2. Natality and mortality data for the United States tabulated by place of residence. 1944. 533 p. Cloth, $2.00.

Vital statistics of United States, 1943: (Census Bureau.)
Catalog No. C 3.139: 943/(pt.)

Pt. 1. Natality and mortality data for the United States tabulated by place of occurrence with supplemental tables for Hawaii, Puerto Rico, and the Virgin Islands. 1945. 228 p. Cloth, $1.50.

Pt. 2. Natality and mortality data for the United States, tabulated by place of residence. 1945. 580 p. Cloth, $2.50.

VITAMINS.

Antineuritic vitamin in skim milk powder. 1921. 8 p. il. (Public Health Service, Reprint 689 from Public Health Reports.) 5¢.
Catalog No. T 27.6/a: 689

Ascorbic acid content of different varieties of Maine-grown tomatoes and cabbages as influenced by locality, season, and stage of maturity. 1942. p. 483–502, il. (Agricultural Dept., Reprint from Journal of Agricultural Research, v. 64, no. 9. Maine–27.) 5¢. Catalog No. A 1.23/a: T 591/35
Relates to vitamin C.

Ascorbic acid content of strains of snap beans. 1943. p. 313–324, il. (Agriculture Dept., Reprint from Journal of Agricultural Research, v. 66, no. 8. G–1281.) 5¢.
Catalog No. A 1.23/a: B 378/43
Relates to vitamin C.

Chemical and physical properties of burbot-liver oil and its vitamin content. 1932. 6 p. il. (Fisheries Investigational Report 12.) 5¢.
Catalog No. C 6.12: 12

Compilation of the vitamin values of goods in relation to processing and other variants. 1942. 244 p. (Agriculture Dept., Circular 638.) 25¢.
Catalog No. A 1.4/a: 638

Critical evaluation of the rat-growth method for determining vitamin B and its content in meals from certain oily seeds. 1938. p. 927–934, il. [From Journal of Agricultural Research, v. 56, no. 12. N. C.–34.] 5¢.
Catalog No. A 1.23/a: V 831/47

VITAMINS—Continued.

Effect of fertilizer and environment on ascorbic acid content of turnip greens. 1943. p. 375–388, il. (Agriculture Dept., Reprint from Journal of Agricultural Research, v. 66, no. 10. Okla.–29.) 5¢. Catalog No. A 1.23/a : T 86/5

Relates to vitamin C.

Effect of fluorine feeding on the storage of vitamin C in the rat and guinea pig. 1935. 6 pages. [From Journal of Agricultural Research, v. 49, no. 11, N. Y. (Cornell)–28.] 5¢. Catalog No. A 1.23/a : V 831/32

Experiment station research on vitamin content and preservation of foods. 1944. 88 p. (Agriculture Dept., Miscellaneous Publication 536.) 10¢. Catalog No. A 1.38 : 536

Losses of vitamin A in drying fresh raw carrots and sweetpotatoes and canned spinach. 1933. 4 pages. [From Journal of Agricultural Research, v. 47, no. 7. Tex.–10.] 5¢. Catalog No. A 1.23/a : V 831/31

Nutritive properties of protein, vitamins B and G, and germ in rye. 1934. 13 pages, illus. [From Journal of Agricultural Research, v. 49, no. 2. Minn.–87.] 5¢. Catalog No. A 1.23/a : R 98/7

Observations on assay of antineuritic vitamin, some of factors involved in use of rat method. 1931. 9 p. il. (Public Health Service, Reprint 1470 from Public Health Reports.) 5¢. Catalog No. T 27.6/a : 1470

Potatoes. Effect of cooking and storage on the ascorbic acid content of potatoes. 1941. p. 381–396, il. (Agriculture Dept., Reprint from Journal of Agricultural Research, v. 61, no. 5. T–11.) 5¢. Catalog No. A 1.23/a : P 847/129

Relates to vitamin C.

Preparation of a concentrate of vitamins B_1 and B_2 from brewers' yeast. 1936. 4 p. (Public Health Service, Reprint 1750 from Public Health Reports) 5¢. Catalog No. T 27.6/a : 1750

Production of vitamin K deficiency in rats by various sulfonamides. 1944. 12 p. il. (Public Health Service, Reprint 2565 from Public Health Reports.) 5¢. Catalog No. FS 2.7/a : 2565

Synthesis of vitamin C from pectic substances. 1914. p. 45–61, il. (National Bureau of Standards, Research Paper 1594.) 10¢. Catalog No. C 13.22/a : 1594

Use of ascorbic acid (crystalline vitamin C) as a substrate in oxidase measurements. 1940. p. 89–100, il. (Agriculture Dept., Reprint from Journal of Agricultural Research, v. 60, no. 2. G–1151.) 5¢. Catalog No. A 1.23/a : As 26/3

Use of dark adaptation technique (biophotometer) in the measurement of vitamin A deficiency in children. 1937. 16 p. (Public Health Service, Reprint 1866 from Public Health Reports.) 5¢. Catalog No. T 27.6/a : 1866

Vitamin A content of barley. 1933. 8 p. il. (Agriculture Dept., Reprint from Journal of Agricultural Research, v. 47, no. 7. Calif.–64.) 5¢. Catalog No. A 1.23/a : V 831/28

Vitamin A in butter. [1945.] 14 p. il. (Agriculture Dept., Miscellaneous Publication 571.) 10¢. Catalog No. A 1.38 : 571

Vitamin A value of blue grama range grass at different stages of growth. 1938. p. 69–72. [From Journal of Agricultural Research, v. 56, no. 1. Ariz.–13.] 5¢. Catalog No. A 1.23/a : V 831/44

Vitamin A values of 128 foods as determined by the rat-growth method. 1941. 31 p. il. (Agriculture Dept., Technical Bulletin 802.) 10¢. Catalog No. A 1.36 : 802

Vitamin B content of foods in terms of crystalline thiamin. 1939. 20 p. (Agriculture Dept., Technical Bulletin 707.) 5¢. Catalog No. A 1.36 : 707

Vitamin content of oils from cannery trimmings of salmon from the Columbia River and Puget Sound regions. 1937. 8 p. (Fisheries Investigational Report 36.) 5¢. Catalog No. C 6.12 : 36

VITAMINS—Continued.

Vitamin D in menhaden fish oils. 1931. 5 p. il. (Fisheries Investigational Report 3.) 5¢.
Catalog No. C 6.12 : 3

See also Leprosy; Medicinal products; Milk powder.

WAKE UP, MAIN STREET. *See* Health and hygiene.

WARTIME WORKING CONDITIONS. *See* Industrial efficiency and fatigue.

WATER.

Ask your health department to check your water supply, safe water on farm; [poster]. 1943. 27.9 x 22 in. (Public Health Service.) 10¢.
Designated as CHP 1. Catalog No. FS 2.26 : C 73/no.1

Drinking water.

Public Health Service drinking water standards; and Manual of recommended water sanitation practice, standards adopted by the Public Health Service, Sept. 25, 1942, for drinking and culinary water supplied by common carriers in interstate commerce [superseding standards adopted June 20, 1925.] 1943. 43 p. (Public Health Service, Reprint 2440 from Public Health Reports.) 10¢.
Catalog No. FS 2.7/a : 2440

Supplying of drinking water to vessels in United States. (Public Health Reprint 1014.) 10¢.
Catalog No. T 27.6/a : 1014

Ground-water supplies, progress report of the Committee on Ground-Water Supplies Conference of State Sanitary Engineers, 1936. 1937. 24 p. il. (Public Health Service, Supplement 124 to Public Health Reports.) 5¢.
Catalog No. T 27.6/2 : 124

Mechanical aids for stream surveys. 1941. 8 p. pl. (Public Health Service, Reprint 2263 from Public Health Reports.) 10¢. Catalog No. FS 2.7/a : 2263

Pollution and purification.

Aquatic life in waters polluted by acid mine waste. 1939. 8 p. il. (Public Health Reprint 2064.) 5¢.
Catalog No. T 27.6/a : 2064

Contribution on the toxicity of algae. 1943. 7 p. (Public Health Service, Reprint 2417 from Public Health Reports.) 5¢. Catalog No. FS 2.7/a : 2417
Relates to water pollution.

Detection and analysis of arsenic in water contaminated with chemical warfare agents. 1944. 12 p. il. (Public Health Service, Reprint 2527 from Public Health Reports.) 5¢.
Catalog No. FS 2.7/a : 2527

Detection and measurement of stream pollution. 1937. p. 365–437, il, 2 pl., 2 p. of pl. map. (Fisheries Bulletin 22.) 20¢. Catalog No. C 6.3/2 : 22

Experimental bacterial and chemical pollution of wells via ground water, and factors involved; Report on geology and ground water hydrology of experimental area of United States Public Health Service at Fort Caswell, N. C. (Hygienic Laboratory Bulletin 147.) 30¢.
Catalog No. T 27.3 : 147

Experimental studies of natural purification in polluted waters:

1. Apparatus and technique for study of biochemical and other oxidations in liquids. 1929. 16 p. il. (Public Health Reprint 1317.) 5¢.
Catalog No. T 27.6/a : 1317

2. Development of a suitable dilute medium. 1930. 12 p. il. (Public Health Reprint 1328.) 5¢.
Catalog No. T 27.6/a : 1328

3. Note on the relation between food concentration in liquid media and bacterial growth. 1930. 8 p. il. (Public Health Reprint 1336.) 5¢.
Catalog No. T 27.6/a : 1336

4. *Exhausted.*

5. Selection of dilution waters for use in oxygen demand tests. 1931. 33 p. (Public Health Reprint 1475.) 10¢. Catalog No. T 27.6/a : 1475

6. Rate of disappearance of oxygen in sludge. 1931. 19 p. il. (Public Health Reprint 1480.) 5¢.
Catalog No. T 27.6/a : 1480

WATER—Continued.
Pollution and purification—Continued.
Experimental studies of natural purification in polluted waters—Continued.

7. Selection of a dilution water for bacteriological examinations. 1933. 11 p. (Public Health Reprint 1580.) 5¢. Catalog No. T 27.6/a : 1580

8. *Exhausted.*

9. Nitrification in sewage mixtures. 1934. 7 p. (Public Health Reprint 1651.) 5¢. Catalog No. T 27.6/a : 1651

10. *Exhausted.*

Experimental studies of water purification:

1–3. *Exhausted.*

4. Observations on the effects of certain modifications in coagulation-sedimentation on the bacterial efficiency of preliminary water treatment in connection with rapid sand filtration. 1930. 42 p. il. (Public Health Reprint 1392.) 10¢. Catalog No. T 27.6/a : 1392

5–6. *Exhausted.*

Final act of preliminary Conference on Oil Pollution of Navigable Waters (and annex), signed June 16, 1926. [1926.] 10 p. (State Dept.) 5¢. Catalog No. S 5.24 : 926/2

Flora and fauna of surface waters polluted by acid mine drainage. 1938. 9 p. (Public Health Reprint 1976.) 5¢. Catalog No. T 27.6/a : 1976

Investigation of pollution and sanitary conditions of Potomac watershed with special reference to self purification and sanitary condition of shellfish in lower Potomac River, Plankton studies, and Hydrographic studies. 1916. 239 p. pl. maps. (Hygienic Laboratory Bulletin 104.) 50¢. Catalog No. T 27.3 : 104

Mobile laboratory units of the Ohio River pollution survey. 1941. 7 p. il. pl. (Public Health Service, Reprint 2259 from Public Health Reports.) 5¢. Catalog No. FS 2.7/a : 2259

Ohio River pollution control, letter from Chief of Engineers, Army, forwarding report on survey of Ohio River and its tributaries for pollution control: (78th Cong., 1st sess., H. doc. 266.) Catalog No. 78–1 : H doc. 266

Pt. 1. Report of Ohio River Committee. 1944. p. 1–145, maps. $2.00.

Pt. 2. Report of Public Health Service. 1944. p. 147–846, il. pl. maps. $2.75.

Pt. 2, supp. Supplement to part 2. 1944. p. 847–1368, il. pl. maps. $1.25.

Oil pollution of navigable waters, report to Secretary of State by Interdepartmental Committee [on Oil Pollution of Navigable Waters], Mar. 13, 1926. 119 p. il. (State Dept.) 20¢. Catalog No. S 1.2 : In 8/5

Planning the organization and conduct of stream pollution surveys. 1938. 7 p. (Public Health Service, Reprint 1931 from Public Health Reports.) 5¢. Catalog No. T 27.6/a : 1931

Pollution problem in the Ohio River drainage basin. 1938. 7 p. (Public Health Reprint 1903.) 5¢. Catalog No. T 27.6/a : 1903

Preliminary Conference on Oil Pollution of Navigable Waters, Washington, June 8–16, 1926 [minutes of meetings, final act, etc.]. 1926. 449 p. State Dept.) [English and French.] 60¢. Catalog No. S 5.24 : 926/1

Preliminary report on cause of decline of the oyster industry of the York River, Va., and the effects of pulp-mill pollution on oysters. 1938. 42 p. il. (Fisheries Investigational Report 37.) 10¢. Catalog No. C 6.12 : 37

Some biochemical relationships in a polluted stream. 1929. 12 p. il. (Public Health Reprint 1295.) 5¢. Catalog No. T 27.6/a : 1295

Study of pollution and natural purification of Scioto River. 1941. 153 p. il. pl. (Public Health Service, Public Health Bulletin 276.) 20¢. Catalog No. FS 2.3 : 276

YELLOW FEVER—Continued.

Vaccine. Anaphylaxis in guinea pigs following sensitization with chick-embryo yellow fever vaccine and normal chick embryos. 1942. 16 p. il. (Public Health Service, Reprint 2375 from Public Health Reports.) 5¢.
Catalog No. FS 2.7/a : 2375

Vaccine. Aqueous-base yellow fever vaccine. 1943. 8 p. (Public Health Service, Reprint 2466 from Public Health Reports.) 5¢.
Catalog No. FS 2.7/a : 2466

Yellow fever. 1940. 9 p. (Public Health Service, Reprint 2141 from Public Health Reports.) 5¢.
Catalog No. FS 2.7/a : 2141

ZINC. Biological, hygienic, and medical properties of zinc and zinc compounds. 1945. 44 p. (Public Health Service, Supplement 179 to Public Health Reports.) 10¢.
Catalog No. FS 2.8 : 179

ZOOLOGY.

Index-catalog of medical and veterinary zoology:

Pt. 1. Authors, Aall to Azzolina. 1932. 142 p. (Animal Industry Bureau.) 10¢.
Catalog No. A 4.18 : 1

Pt. 2. Authors, B to Bychkov. 1938. p. 143–612. (Animal Industry Bureau.) 55¢.
Catalog No. A 4.18 : 2

Pt. 3. Authors, C to Czygan. 1939. p. 613–961. (Animal Industry Bureau.) 40¢.
Catalog No. A 4.18 : 3

Pt. 4. Authors, D to Dzunkovski. 1940. p. 963–1176. (Animal Industry Bureau.) 30¢.
Catalog No. A 4.18 : 4

Pt. 5. Authors, E to Fynney. 1941. p. 1177–1458. (Animal Industry Bureau.) 45¢.
Catalog No. A 4.18 : 5

Pt. 6. Authors, G to Gyser. 1942. p. 1459–1754. (Animal Industry Bureau.) 40¢.
Catalog No. A 77.219 : 6

Stiles and Hassall's host catalog, index-catalog of medical and veterinary zoology:

Pt. 1. Key-catalog of protozoa reported for man. 2d ed. 1929. 63 p. (Hygienic Laboratory Bulletin 140.) 15¢.
Catalog No. T 27.3 : 140

Pts. 2–5. p. 69–601. *Exhausted.*

Pt. 6. Key-catalog of parasites reported for Chiroptera (bats) with their possible public health importance; and The confused nomenclature of Nycteribia latreille, 1796, and Spinturnix Heyden, 1826. 1931. p. 603–789, il. (National Institution of Health Bulletin 155.) 30¢.
Catalog No. T 27.3 : 155

Pt. 7. p. 791–911. *Exhausted.*

Pt. 8. Key-catalog of parasites reported for Carnivora (cats, dogs, bears, etc.), with their possible public health importance. 1935. p. 913–1223. (National Institute of Health Bulletin 163.) 20¢. Catalog No. T 27.3 : 163

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B1

Homemaking IMPROVED AND SIMPLIFIED

HEALTH *and Good Grooming*

Living in the most challenging period of history imposes the responsibility of personal efficiency on every member of the family . . . in the home, in business and in school. We must all, therefore, plan simple routines for health and good grooming. Especially is this true of children. If they learn to keep themselves neat and clean early in life, good habits are formed that continue as they mature. Thus they will acquire a feeling of assurance which will help them to be better adjusted socially.

THE DAILY HABIT OF HEALTH

Cleanliness comes first in our plan, as it is the basis of general well-being. Every self-respecting person is meticulous about personal cleanliness, clean clothing and a clean home. (See Chapter Three.)

A Well-rounded Diet is another requisite of health, as explained so simply yet fully in the government's "Basic 7" chart.

Physical Fitness calls for posture control, fresh air, sunshine, exercise, recreation, rest and mental poise. The illustration demonstrates good walking posture when a bag is carried. The body is held erect, back straight, shoulders even, weight on both feet, toes pointed straight forward.

First-aid Health Needs include absorbent cotton, sterilized gauze, adhesive tape, a germicide, sodium bicarbonate, dry mustard, petroleum jelly. There should also be non-prescription remedies from dependable pharmaceutical houses. Many supplies are packed in steel-and-tin containers for safety, convenience and protection of quality.

DAILY ROUTINES

THE DAILY BATH...For health, comfort and social acceptability, the body should be scrubbed all over with soap every day. Just stepping under a shower is not sufficient. After the bath, a light dusting with bath powder is refreshing. A deodorant should be used regularly, particularly in warm weather. Men and boys need to be especially careful as vigorous exercise increases perspiration.

Daily Shave . . . Most men look and feel better if they shave every day. The use of talcum powder after shaving allays irritation and improves appearance.

Care of Teeth . . . For better digestion, and better appearance too, take care of your teeth. (1) Include in your diet milk, citrus fruits and juices, crisp foods. (2) Brush your teeth after each meal or at least twice a day using a good dentifrice. Dental floss aids cleansing. (3) See your dentist regularly.

Care of Feet (1) Keep the feet clean . . . antiseptic foot powder is soothing. (2) When necessary, cut toenails straight across, not too short. (3) Wear well fitted shoes and stockings. (4) Wash stockings after each use. (5) Learn to do a few exercises that strengthen the feet.

Basic Foot Exercise (1) Rise on toes. (2) Roll to outer edge of feet. (3) Then roll to heels. (4) Rest on balls of feet.

Care of Hands and Arms (1) Wash hands with soap frequently . . . palms, backs, *between fingers*. Scrub nails, knuckles, and elbows with brush. (2) Use hand lotion or cream frequently each day. (3) Manicure regularly and keep nails clean.

Health and Good Grooming Aids packaged in steel-and-tin containers retain their original qualities . . . do not cake or become soggy. These containers will not break if accidentally dropped on the floor.

BASIS OF GOOD GROOMING

PERSONAL APPEARANCE . . . The daily routines explained on the page opposite are essential for good grooming. In addition, the well groomed woman gives thought to:

Use of Cosmetics . . . Conservative make-up improves the appearance, if the directions supplied by dependable beauty aid houses are followed. Young girls should choose delicate coloring in cosmetics and apply lightly. Beauty accessories, puffs, brushes, etc., should be kept immaculate.

Care of Hair . . . An important personal asset is clean, shining hair arranged in a becoming, appropriate style. Brush the hair every day, cleansing the brush on a towel between strokes. Shampoo when necessary. Wash brushes, combs and side combs with soap at least once a week.

APPROPRIATE CLOTHING should be selected according to your needs. If it is kept clean, well brushed and pressed, it will last longer and look better. A full length mirror is a help in checking your appearance.

Spot Removal (1) For grease, use a good cleaning fluid, contained in can to obviate fire hazard. Lay spot face down on absorbent pad. Dampen soft cloth with fluid. Stroke toward center of spot. (2) For sugary spots . . . dampen cleaning cloth with cold water and sponge spot lightly.

Care of Shoes (1) Keep grain leather shoes well polished with paste polish which comes in protective tin box so that it will not dry out. Brush suede shoes. (2) Use shoe trees. (3) Wear rubbers in bad weather. (4) Rotate two or more pairs of shoes for longer wear.

COORDINATED SCIENTIFIC RESEARCH IN RELATION TO FAMILY HEALTH

Scientists in the medical, pharmaceutical and CANtainer fields coordinate their research so that the health needs of the family may be met.

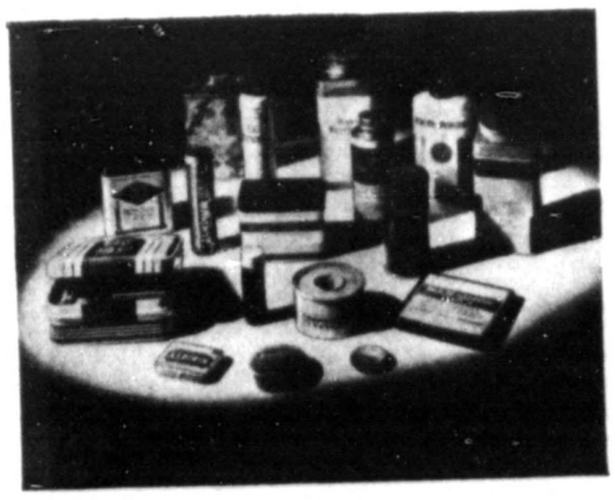
Medical Laboratories have made countless contributions to better health. For example, the use of anesthetic ether for painless surgery, immunization against certain communicable diseases, use of plasma, penicillin, and many others.

The illustration above is a reproduction of a steel engraving showing Dr. William T. G. Morton, in 1846, giving the first public demonstration of ether anesthesia in an operation before the staff of Massachusetts General Hospital.

Pharmaceutical Laboratories develop products, processes and equipment which make these discoveries available for widespread professional use. They also supply the home with dependable first-aid, health and good grooming needs and non-prescription remedies.

Container Technicians work with medical and pharmaceutical scientists to develop appropriate containers for home and hospital supplies. Many of these containers are made of steel-and-tin because: (1) They afford protection of the product from light, air, moisture, and contaminating organisms that might cause deterioration of the medicinal qualities. Cans also prevent absorption of odors and flavors of other products. (2) They will not shatter. (3) Directions for use are printed permanently right on the package. (4) Functional design of packages, as illustrated, permits convenient and economical use of products.

To sum up, steel-and-tin containers keep products clean and sanitary, protect their original quality and deliver them safely to your home.



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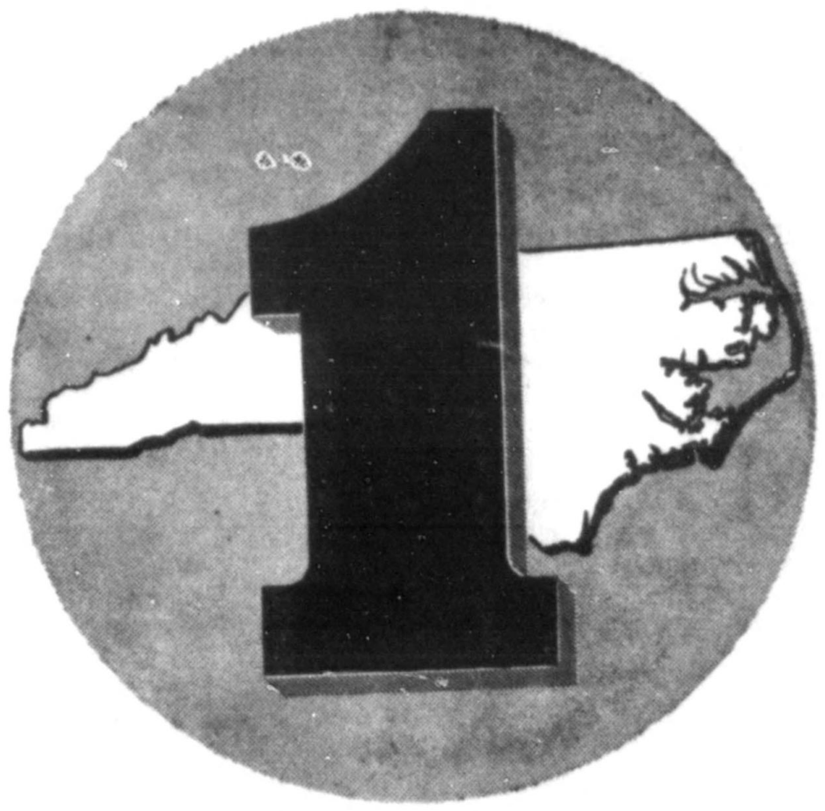
BELIEVE IT or NoT by Ripley

This cartoon drawn for and contributed to the North Carolina Good Health campaign by Robert L. Ripley, creator of "Believe it or Not."

Aqa

High School Oratorical Contest:

"NORTH CAROLINA'S NUMBER ONE NEED -- GOOD HEALTH"



PRIZES: $500.00 College Scholarships

To Winning Girl and to Winning Boy Orator

SPONSORED BY NORTH CAROLINA GOOD HEALTH ASSOCIATION, INC., IN COOPERATION WITH THE N. C. DEPARTMENT OF PUBLIC INSTRUCTION

WANT A $500 SCHOLARSHIP?

Here is a contest with a twin "jack-pot."

By making a 10-minute talk on the subject "North Carolina's Number 1 Need - Good Health" you may win a $500 scholarship. Win or lose - you will be rendering a fine public service.

The winning boy and winning girl will receive a $500 scholarship to any North Carolina college of his or her choice, donated by the North Carolina Good Health Association, Inc.

All over the State people are interested in the crusade of raising North Carolina's low position among the states in the matter of health. Out in Hollywood, Kay Kyser, a native North Carolinian, is hard at work in the program to tell people of North Carolina about the Good Health movement.

Every high school student in North Carolina may enter the contests. Application should be made to your Principal. Try-outs will be held in each school and by November 27, 1946 a winning boy and winning girl in each of the State's 100 counties will be chosen. On December 6 at 17 places in North Carolina there will be a further round of elimination. These rounds will be held principally on college campuses. Then on December 13, the winners in the 17 district contests will compete at four places in the State - probably Asheville, Greensboro, Greenville and Red Springs.

The final four speakers will be chosen on January 10, 1947 with four contestants from the West speaking in Greensboro and four from the East speaking in Raleigh. Then will come the grand finals at a place and time to be announced for the grand prizes of $500 scholarships.

A separate contest conducted along the same lines and on the same subject will be conducted for Negro high school students. Two additional prizes of $500 scholarships for the winning Negro boy and the winning Negro girl will be given by the North Carolina Good Health Association, Inc.

The eyes of all North Carolina will be focused on the contestants in this oratorical competition. The opportunity for you is a big one - whether or not you win one of the final prize scholarships.

The information you will need in preparing your talk is contained in the pages that follow. The rules and regulations governing the competition also are listed.

HEALTH ORATORICAL CONTEST

Regulations for Contest for White Pupils

The North Carolina Good Health Association Inc. is sponsoring an oratorical contest in the high schools of the state as a part of the statewide program to focus attention on better health.

The winning boy and the winning girl will each receive a scholarship to the college of the winner's choice valued at $500 donated by the North Carolina Good Health Association Inc.

Regulations for the Contest

1. The contest will begin with a discussion of health problems in the public high school classes in such subjects as health, science, social studies and English. Any pupil regularly enrolled in the public high school is eligible to enter.

2. Persons entering the contest will prepare a speech on North Carolina's Number 1 Need - Good Health. Time allowed for the speech shall not exceed ten minutes.

3. County contests will be arranged by local representatives of the North Carolina Good Health Association, Inc. and local superintendents. Superintendents of city administrative units will be asked to cooperate with county superintendents in arranging one contest for the county, including city administrative units.

4. Each high school is entitled to select one boy and one girl to represent it in the county contest but notice of the entries from the school must be filed with county or city superintendents prior to the date of the contest.

5. All county contests must be held by November 27, 1946.

6. Judges selected by the local committee on arrangements will choose one boy and one girl who are then eligible for entry into the second round contests.

7. Second round contests will be held at convenient points throughout the State under the auspices of colleges and city and county school officials. The North Carolina Good Health Association, Inc. will arrange for these centers and superintendents will be notified.

8. Persons eligible for the second round contest must notify the officials, at the designated center, of intention to enter two days prior to the contest.

9. The sponsoring agencies will not be responsible for housing or feeding the contestants. However, the second round contests will be held in the afternoon so as to permit pupils to return home for the night.

10. The second round contests will be held on December 6, 1946. Judges in each center will select one boy and one girl who will become eligible for third round contests.

11. The third round contests will be held at centers in each of the four divisions of the State set up by the North Carolina Good Health Association, Inc. Due notice of the centers selected will be given to all superintendents.

12. The Third round contests will be held in the four centers on December 13. Judges in each of the four centers will select one boy and one girl, making a total of four boys and four girls, who become eligible for the fourth round contests.

13. The fourth round contests will be held at two centers, east and west, on January 10, 1947, at which time the judges in each center will select one boy and one girl. These four pupils, representing east and west, will compete for the two $500 scholarships at a time and place to be designated.

14. Notice of desire to enter any of the contests except county contests may be sent to Harry Caldwell, Executive Secretary, North Carolina Good Health Association, Inc., Durham, N. C. His office will also answer requests for information.

15. After each contest the names and addresses of winning pupils must be sent to Harry Caldwell, Executive Secretary, North Carolina Good Health Association, Inc., Durham, N. C.

Regulations for Contests for Negro Students

There will be two final prizes for Negro students of $500 scholarships each for winning boy and winning girl. Regulations outlined for white pupils will apply to the Negro contest except that after the county elimination there will be only two additional eliminations as follows:

1. Round 2 contests will be held at the five State supported colleges for Negroes:

A & T College, Greensboro, N. C.

Winston-Salem Teachers' College, Winston-Salem, N.C.

Elizabeth City State Teachers' College, Elizabeth City, N. C.

N. C. College for Negroes, Durham, N. C.

2. Winners in Round Two contest will compete for the two $500 scholarships at the North Carolina College for Negroes, Durham, N. C.

HEALTH ORATORICAL CONTEST FACT SHEET

PREFACE--HOW, WHY AND WHAT IT'S ALL ABOUT

Some time ago, the Governor of North Carolina created the "North Carolina Medical Care Commission" to survey the health status of the State, to report on the existing medical care facilities and personnel and to formulate a comprehensive plan for enlarging existing facilities and the creation of new facilities where needed. The "Medical Care Commission" enlisted the aid of medical experts in the State and seven national figures. Many surveys were conducted, and from all these surveys the Commission plans to draw up a concrete proposal.

To assist the "Medical Care Commission" in its work and to promote interest in health conditions in North Carolina, some 200 to the State's leading medical men and laymen gathered 18 months ago in Thomasville and formed the "North Carolina Good Health Association, Inc.," a non-profit, volunteer organization.

Kay Kyser, in North Carolina on his vacation in August, ran into Dr. I. G. Greer, head of the Thomasville Baptist Orphanage, who is President of the North Carolina Good Health Association, Inc. He discussed the health problem, the background of all the surveys made, and his fears for the fate of the Good Health Plan. Kyser asked if the people of North Carolina were aware of the plan and were conscious of the health status which prompted the Plan. Dr. Greer said, "No" he didn't think so. Kyser suggested that the Good Health Association go to the people and start a bonfire at the grass-roots--to use all the various means of exploitation to merchandise health to the people--to snap them out of their lethargy and complacency. Dr. Greer liked the idea, Kyser drew up a prospectus, the Good Health Association adopted it, and the plans are now well under way.

Harry B. Caldwell, ex-four times master of the North Carolina Grange, resigned as secretary and treasurer of the American Plant Food Council in Washington to become executive secretary of the new health movement.

Incorporators of the Good Health Association constitute its board of directors. They are R. Flake Shaw, Ben Cone, Julian Price, and Mrs. Harry Caldwell, of Greensboro; Dr. W. M. Coppridge, George Watts Hill, and William B. Umstead, Durham; Irving Carlyle, Winston-Salem; Thomas J. Pearsall and Hyman L. Battle, Rocky Mount; Charles A. Cannon, Concord; Josephus Daniels, Raleigh; and Dr. Greer.

Other officers elected include Charles R. Jonas, of Lincolnton, Executive Vice-President, and four vice-presidents, who have been active as organizing chairmen in four regions of the state. These are D. Hiden Ramsey, Asheville; Irving Carlyle, Winston-Salem; James S. Fricklen, Greenville; and Judge Henry L. Stevens, Jr., Warsaw. County chairmen are now being named.

The Good Health Association will permanently promote Good Health; the immediate objective is to mold public sentiment. This campaign is not to raise money, and citizens are not being asked to vote--it is to make them conscious of the facts, enthusiastic about good health, and determined to have a Good Health Plan.

This is the Good Health Association's #1 Project. If the objective is achieved other programs to be sponsored include; Drives for nurses, nurses aids, etc; increased Public Health functions; compulsory examinations of school children; compulsory chest and blood examination of all citizens; hospital sanitation laws, and by all means a balanced and scientific diet program. Medical science has said for a long time--"Physically, a man is what he eats."

THE GOOD HEALTH CAMPAIGN

WHY #1 NEED - Because

1. Draft Rejections - In the War, North Carolina had the highest percentage of draft rejections of any state in the Union. (Had high % of volunteers at start of war, but of those drafted, about 42% of whites and 71% of Negroes rejected. For startling comparison, see "Draft vs Orphanages" - page 4.)

2. Mother and Baby Deaths - North Carolina is 41st in maternal mortality; 38th in infant mortality.

3. Mental Ills - In 1945 there were 8,462 patients in the State Hospitals for the Insane, 1255 additional who couldn't get in--1500 more released from the State Hospitals under probation--yet, only about 2% of the mentally ill are insane. These facts are from a report to the North Carolina Medical Journal by Doctor Morris H. Greenhill, head of Neuropsychiatry at the Duke University Medical School, who further says--North Carolina not only ranks low in the quality of its medical care for the mentally ill patients, it also has the highest percentage of feeble minded individuals of any state in the Union. "There are an estimated 27,000 mentally defective white children, and 30,000 more who are of borderline intelligence. In 43-44, 114,000 children failed to be promoted in school, and a large majority had low level of intelligence. One-half of the children in correctional schools, and 3% in public schools are feeble minded.)

4. Tuberculosis - With this disease we are better off than the United States average--In 1945 the American average was 39 deaths per 1000,000--In North Carolina 31.7. In spite of this, 1,198 died last year--there are over 300 known active cases of tuberculosis now waiting for admission. (In some cases the wait is for four months.) For more on tuberculosis see Page 5.

5. Venereal Disease - Progress has been made, but rates are still high especially among Negroes. Statistics not available yet.

6. Children's Diseases-- Recent compulsory examination of all boys in two upper school grades found--dental defects 85%--defective vision 16% --hernia 2%-diseased tonsils 14%--overweight 7% and underweight 16% --all remediable defects. In addition, Doctor George M. Cooper says nutritional deficiencies are rampant in most all children causing rickets, pellagra, etc; intestinal disease still prevalent in most rural sections, and Doctor J. S. Gaul reports bad orthopaedic conditions.

THREE REASONS FOR ALL OF THIS

1. ECONOMICS

Most people cannot pay for modern medical care. (Especially Negroes and rural people) In 1940 North Carolina ranked 44th in net income per capita, ($317--national average $573.) We were 42nd in value of dwellings; 38th in homes with electricity; 41st in homes with radios and running water.

II. EDUCATION

In 1940 North Carolina was 42nd in percent of adults with less than a fifth grade education, and most of our educated people are insufficiently informed in health matters to take advantage of existing facilities. Most of population is ignorant and indifferent to preventative measures. Also, value of nutrition not understood. Sanitation laws are lax. (Public health personnel and facilities ridiculously overloaded.)

Doctor W. M. Coppridge, President of the North Carolina Medical Society says: "Every small hospital or medical center established in this State should be a center of health education conducted for adults as well as youngsters. In any state program, the education of the people to avail themselves of the facilities offered is one of the largest problems."

III. FACILITIES

1. North Carolina is 42nd in hospital beds per thousand population. (Accepted average is four beds per thousand.) Of the 100 counties, 34 have no hospital beds at all; 31 counties have less than two beds per thousand; 31 counties have from two to four beds per thousand, and only four counties have more than four beds per thousand. We are 6000 hospital beds below the average for our population.

2. North Carolina ranks 45th in the nation in the number of doctors per 100,000 population. We need 13 to 1500 additional doctors to provide one doctor for each 1000 people. (More doctor statistics on page 5.)

3. North Carolina ranks 40th in percentage of babies delivered in hospitals. (Only 17.1% of rural infants and 13.6% of Negro babies delivered in hospitals.)

4. North Carolina ranks 40th in doctors attendant at births. (In 1945 there were over 15,000 childbirths with midwives.)

WHAT TO TELL THE PEOPLE

1. By all means, don't talk down to them. Use bad statistics, but don't scold too much--let's do it in reverse. For instance, "Yes, its true--and statistics are correct, but one thing we are sure of --now that you people know the facts you will do something about it, and when you do, North Carolina will be the beacon light for other states to follow. (Emphasize the fact that what we are doing practically every other state also needs).

2. Let's not paint the picture too black. After all, there are some bright spots in the North Carolina Health picture. For instance, we have a high birth rate, low death rate, and very favorable span of life. Deaths from tuberculosis in North Carolina are lower than the national average.

3. Let's use tuberculosis as a fine example of what we are driving at. Point out that our average is good with this disease because years ago the State started providing treatment and proper care. Under the fine leadership of Doctor P. P. McCain, this system has paid great dividends to our people.

4. Show the need for greatly enlarged medical facilities and personnel, but at the same time emphasize the fact that a good part of the bad health is the fault of the people themselves--their apathy and indifference towards sanitation, medical care, disease prevention and so forth. Point out there are many ways they can help improve the situation while we are waiting for a larger and better distribution of hospitals and medical personnel.

5. Point out that twice before North Carolina has taken itself by its boot-straps and pulled us out of the mud--first, with schools and then with roads, and we are sure we can do it again--this time with health.

6. Point out that we realize in addition to the individual cooperation of the people in the State, an over-all State Health Plan will be necessary and assure them such a plan is being formulated by the medical experts and other leaders of the state.

7. By all means use quotes from famous North Carolinians.

8. In other words, things are black but not hopeless. We can drive disease from the State if every man, woman and child pledges to help do something about it.

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DRAFT VERSUS ORPHANAGES

In draft rejection statistics, for each year of the War, North Carolina was between 45th and 48th, and in 1943 we had the highest percentage of draft rejections in the United States--during this period (49.2% of the whites were rejected and 71.5% of the Negroes. Contrast that with the combined record of five of the leading orphanages in North Carolina. Between them they had 1,860 boys and girls called to the colors and only 16 were rejected. Yes, only 16 out of 1,860 --less than 1%. Were these orphans fed caviar, and sent to May Clinic for examination? You bet your life they weren't -- they received three plain, wholesome, well balanced meals a day and periodically a doctor felt their pulse, listened to their heart, thumped on their chest, looked down their throat and thus kept them well. Think how wonderful our State would be if we could multiply the record of these orphanages all over the State!! And we feel sorry for the orphans!! We better wish we could get our own children in the orphanages so they could grow up healthy and strong!

STATUS OF MENTAL HEALTH--ADDITIONAL INFORMATION

Dr. Greenhill points out our State Institutions for the Insane are running over, and yet experts tell us only 2% of the mentally ill are insane. For the remaining 98% there are only three clinics in North Carolina where they can get help. The Department of Neuropsychiatry at Duke Hospital sees approximately 3,000 per year, the Charlotte Mental Hygiene Clinic 274, and the Mental Hygiene Clinic of Raleigh and Wake Counties, 130. In the private sanatoria devoted to mental illness, there are facilities at any one time for a total throughout the State of 140 patients who can receive treatment for a disorder other than insantty. Outside of the state hospitals, there are only 20 physicians in the entire State who can devote most of their time to the treatment of mental illnesses.

ADDITIONAL ON TURERCULOSIS

Source: Paul P. McCain, MD
Supt. N.C. Sanatorium
(Letter Sept. 25, 1946)

In 1945 the tuberculosis mortality rate for North Carolina was 31.7. The death rate for the United States in 1945 was 39 per 100,000. For a disease which is both preventable and in the early stages curable it is tragic, however, that in 1945 we had 1,198 deaths from tuberculosis. The rate for Negroes is about three and a half times that of the whites. (18.1% for whites--66.6% for Negroes.)

Surveys show there are 8 to 10 cases of tuberculosis for each death; therefore, there are approximately 10,000 people in North Carolina with clinical tuberculosis. (The majority of whom are as yet undiscovered.) The State is putting on mass surveys in order to discover these cases. By the mass X-raying of the "apparently well" approximately one out of every 200 is found to have clinical tuberculosis and fortunately 75 to 80% are found to have the disease in the early, non-communicable and non-contagious form. If arrangements can be made to hospitalize these cases as soon as they are discovered there is a good chance of tuberculosis being brought under control. In contrast, the vast majority of patients having tuberculosis discovered by the usual methods have advanced disease by the time it is found and have already infected the other members of the family !!

All of the State Sanatoria and most of the county sanatoria have waiting lists. There are at least 300 known active cases of tuberculosis who are waiting for admission, and in some institutions they have to wait from two to four months for admission. Doctor McCain says we need 1000 more beds to take care of the patients in this State with tuberculosis. If the beds could be made available we believe that tuberculosis could be brought under control in this generation. We add, "Yes, together with a law requiring periodic chest examination"!!

ADDITIONAL DOCTOR MATERIAL

Most all of the 13 to 1500 additional doctors needed are needed in rural areas. Only 31 percent of our doctors live in rural areas, but 73 percent of our population is rural. Cities above 10,000 in population with only one-fifth of the State's population have one-half of our doctors. There are only 144 Negro doctors in the State to serve a million Negro people. We need about 850 additional Negro doctors. The number of rural doctors is declining. In 1914, there were 1,125 doctors living in the rural areas of the State, but by 1940 we had only 719 rural doctors. The number of rural people per physician went up from 1,678 in 1914 to 3,613 in 1940. The number of doctors above 55 years of age in the State as a whole, has gone up from 15.6 percent in 1914 to 32.0 percent in 1940. In rural areas the percent of doctors above 55 years of age went up from 14.6 in 1914 to 37.5 in 1940.

QUOTATIONS

In his inaugural address, January 4, 1945, Governor R. Gregg Cherry said: "I believe that an adequate medical examination and care should be provided for all the children in the State whose parents are not able to provide same. Only less sacred than the right of a child to obtain an education is his right to get a fair chance of health in his youth. The neglect of youth becomes the burden of age and a grievous loss to the State in earning power."

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Feature Writer Tom Bost: "Let's make good health contagious in North Carolina."

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From the Inaugural Address of the late Governor T. W. Bickett in 1917: "Every child has a natural right to have any mental or physical defect corrected, if it be in the power of medical or surgical skill. The incidental fact that the parents may not be able to pay for the necessary treatment in no way affects the rights of the child."

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Doctor I. G. Greer - President of the North Carolina Good Health Association, Inc., says: "North Carolina is too poor to have bad health."

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The Winston-Salem Journal: "North Carolina needs more physicians for rural districts and smaller towns, district health centers, and the extension of comprehensive public health services throughout all counties of the State."

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News and Observer, Raleigh: "The crying need in North Carolina now is for a health program that will reach all the people of the State just as the need in 1900 was for public schools and the need in 1920 was for good roads. Hospitals and medical centers must be made available to all the people and doctors, nurses, and technicians in sufficient quantities to staff those institutions must be trained."

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Durham Herald: "Now is the time for North Carolina to do something about health. We are coming now to the realization that good health is bought at the cost of the interest and efforts of all the people. We are coming to realize that only as the people themselves know of the needs for a State-wide health program will we ever be able to do something about the deplorable state of affairs in North Carolina.

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Charlotte News: "The people of North Carolina understand the nature of the crisis in health and are willing to sacrifice to meet it."

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Twin City Sentinel: "Every enlightened commonwealth has a deep and inescapable responsibility to those who need hospital and medical care for which they cannot pay. But the dollars which will be involved in such continuing outlays will be returned to the State in a healthy, self-supporting citizenship. Poverty and ill-health go hand in hand. When ill-health is not corrected, it ends up sooner or later as a dependency burden upon the State."

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Asheville Citizen: "More hospital beds are needed in rural areas. More doctors must be found to serve rural people in well-equipped clinics or small rural hospitals."

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Dr. W. M. Coppridge, President of the Medical Society of North Carolina: "The North Carolina Good Health Association is truly a citizens and peoples' movement built on a community basis, larger units assisting the smaller in maintaining high standards of medical care."

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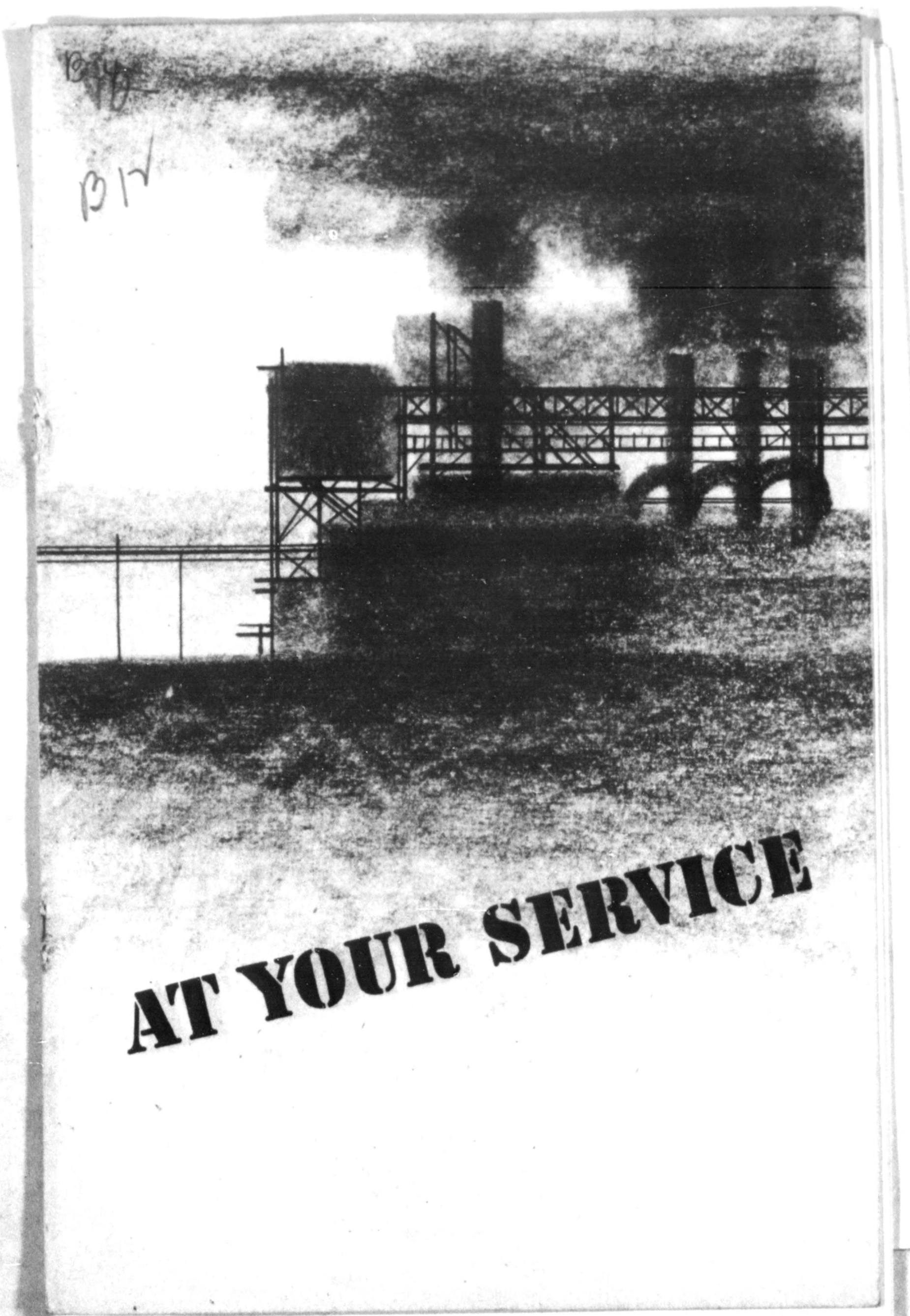


INDUSTRIAL HEALTH PAYS!

means lower costs for workmen's compensation . . . cuts training costs.

IT PAYS MANAGEMENT BECAUSE:

it increases production by cutting down man-hours lost from work . . . keeps skilled workers on the job . . . keeps employees satisfied and therefore efficient. . .

IT PAYS LABOR BECAUSE:

it prevents the misery of sickness and injury . . . protects the worker,

his family

and his community, by lengthening

the span of his productive years . . . develops understanding of personal health needs . . . keeps employees earning longer.

Industrial Hygiene is the weapon with which modern science attacks this problem.

Health hazards in industry can be overcome . . . science knows how! Management can provide safeguards against them . . . workmen can protect themselves . . . if they know how.

Does only the old-style, health-neglectful plant have industrial health hazards? Not at all. Even the modern, progressive plant with a good medical department may have hidden dangers to the health of its workers.

Science has licked many of the old menaces. It's a poor mine nowadays that lets its workers get silicosis. It's a poor plant that lets its workmen get lead poisoning.

But chemistry is adding new substances all the time to the materials used by industry. Some are dangerous. Which ones? They can't be recognized by sight or name.

Methods change. Change a harmless process, and it may kill workers.

LET THE EXPERTS HELP!

There is an agency responsible to the people for guarding the health of workers . . . staffed with experts, trained to recognize industrial health hazards, able to solve in-plant health problems, equipped to wipe them out.

It is the DIVISION OF INDUSTRIAL HYGIENE of your State or City. Let it serve you.

Industrial physicians . . . industrial hygiene engineers . . . industrial nurses . . . chemists . . . dentists . . .

In everything connected with industrial health they are ready to give you their help.

Behind them are laboratories . . . to help the doctors diagnose cases of occupational disease, to test samples of air containing invisible menaces, to analyze dangerous materials used by industry.

And behind them stands the Industrial Hygiene Division of the United States Public Health Service.

Your Department of Health
Industrial Hygiene Division

the doctor

industrial engineer

chemist

U. S. Public Health Service
Industrial Hygiene Division

Is the right specialist lacking to solve your particular problem of industrial health? The national industrial hygiene unit will lend such a specialist to you, through your own local division of industrial hygiene. He will bring to your problem experience gained in dealing with situations like yours throughout the Nation.

Is the problem in your plant so complicated that the local laboratories can't handle it? It can be solved in the big industrial hygiene research laboratories of the United States Public Health Service. They're working all year 'round . . . adding to the scientific knowledge about industrial sickness . . . learning the danger or safety of new industrial methods and materials . . . developing new and better ways to deal with the old dangers.

HOW THE EXPERTS HELP

Ask for the help of your industrial hygiene division to clear up a dangerous or suspected condition in your plant, and you will get—

a team of experts

Each member will look at your problem from the angle of his own knowledge . . . work on it with his own special skill. Cooperative attack is what it takes to solve problems of industrial health.

The Medical Problems

It takes an industrial physician to tackle industrial sickness in a plant. Skin troubles caused by cutting oils, acids, solvents, cleansers. Troubles caused by breathing dangerous dusts . . . asbestos, silica, bits of metal, coal dust, animal hair . . . to mention just a few. Troubles caused by breathing dangerous fumes, vapors, gases . . . and the list of chemicals that give off such substances is long. Eye troubles, digestive disorders, "colds" . . . all the many ailments which may knock a key worker off the job. Doctors must know the processes and materials of industry before they can diagnose with certainty the ills that result from them.

Your own plant physician can receive valuable help from the doctor-member of the industrial hygiene team.

But if you have no plant physician your plant especially needs this service. How many of your employees are out today? Do you know the causes?

Take this case, just as an example:

A mysterious wave of illness swept through a plant . . .

$= \frac{1}{5}$

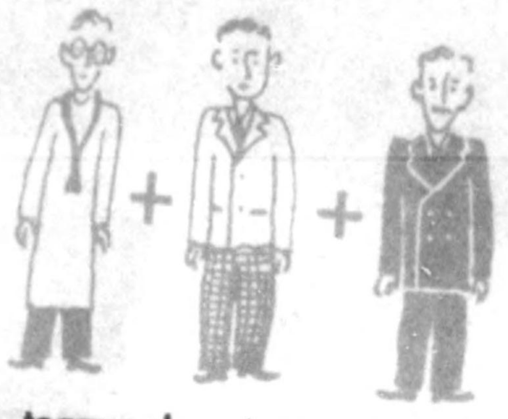
manufacturing parachutes. A fifth of the working force of 675 women were sick.

"Something-I-ate" was blamed for the trouble by most of them.

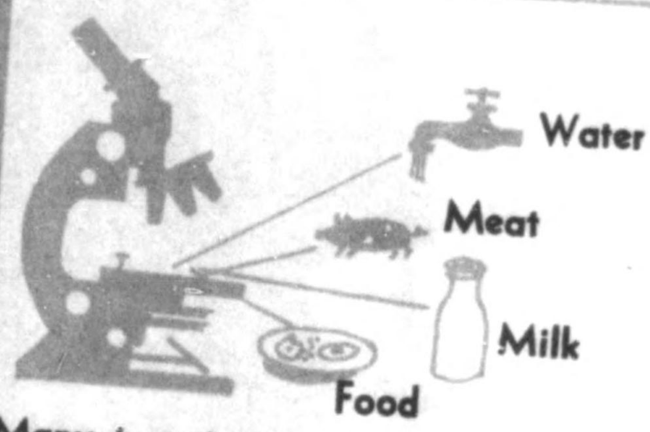
But the plant nurse wasn't sure. And new cases kept developing.

The nurse knew she needed help. She called upon the County Health Department. Public health doctors were sent. They examined all the sick women . . . studied each case . . . checked and found there was no epidemic in the community, none of the same kind of illness in families of the sick workers.

Each case was studied carefully.



The teamwork of the industrial hygiene unit went into action. The State engineers were called in.

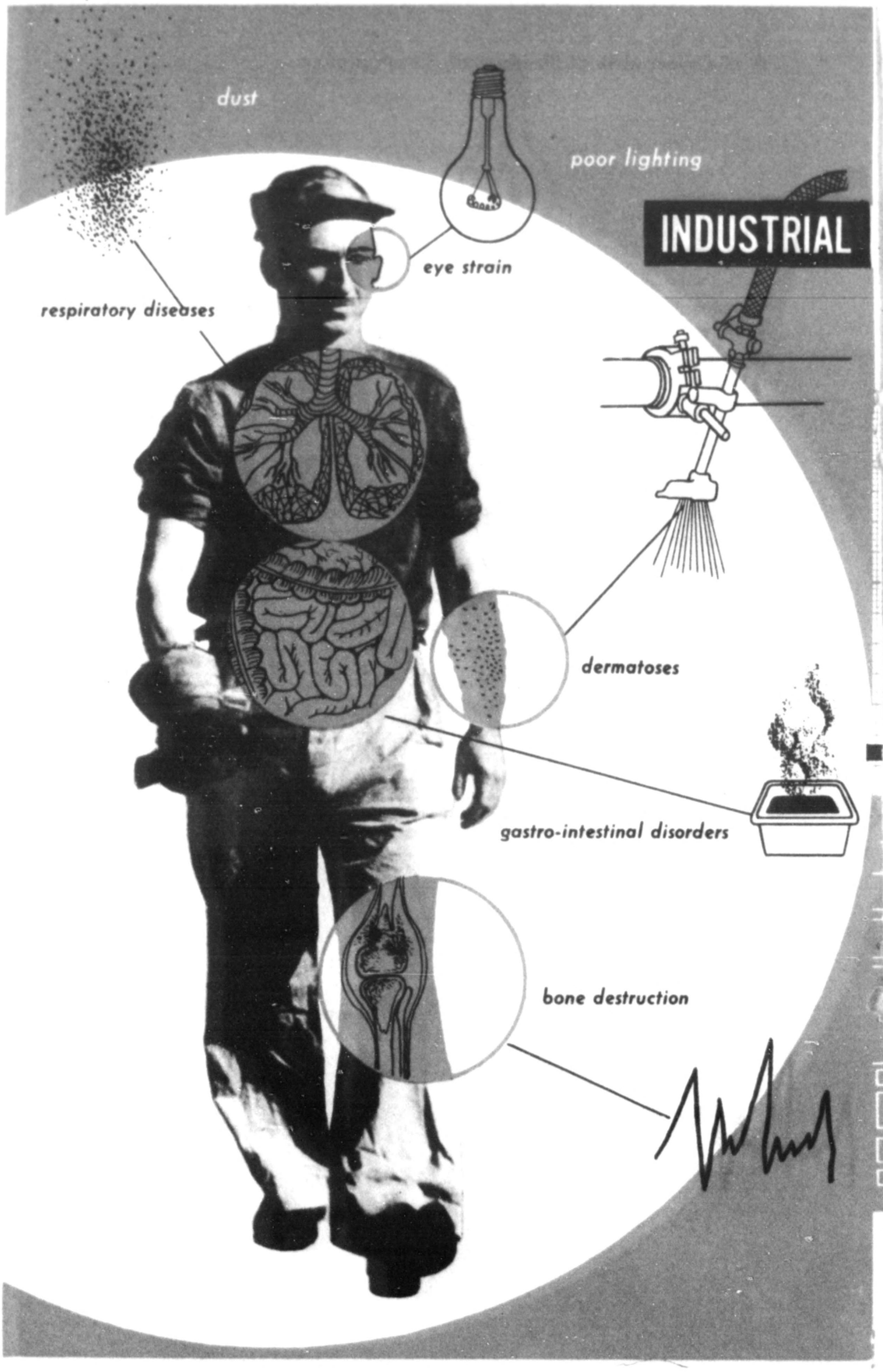


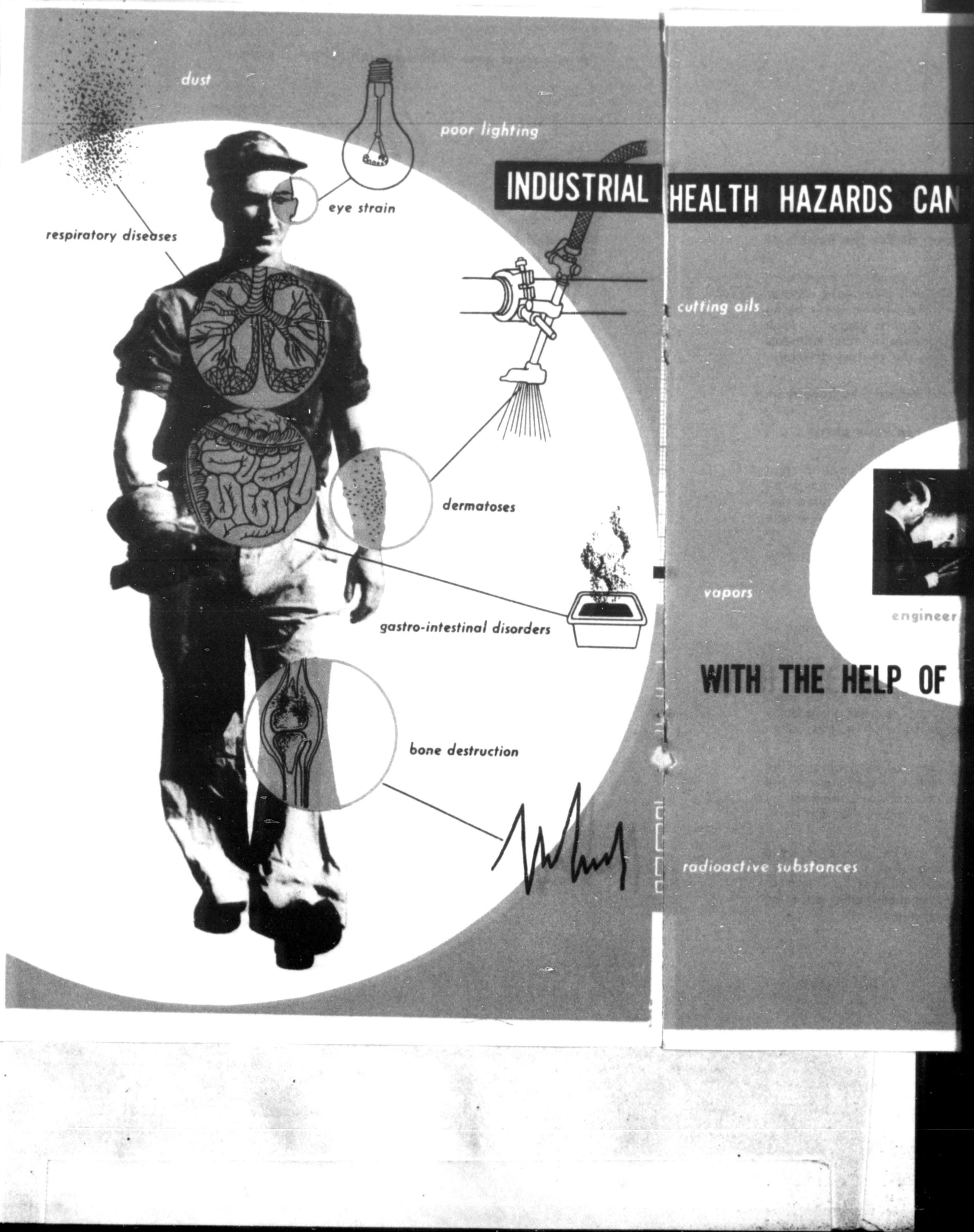
Many investigations were made.

Samples of air in the workshop showed a highly poisonous vapor

. . . more than twice the safe amount, generated from the spotting solution for cleaning the nylon parachutes . . . toxic!

The mystery was solved.





EALTH HAZARDS CAN BE CONTROLLED

tting oils

vapors

engineer doctor chemist

WITH THE HELP OF THE TEAM OF EXPERTS

adioactive substances

THE ENGINEERING PROBLEMS

What can the industrial hygiene engineer do for the health of your workers?

Engineers on the industrial hygiene team are concerned with everything in your plant that might harm workers. They will investigate ventilation, unnecessary noise, poor lighting . . . find out whether air is being made poisonous by dangerous dust, fumes, vapors, gases . . . look into conditions which may be causing skin disease or other ailments among employees . . . investigate every step in the process of manufacture for health hazards.

You can count on the engineer members of the industrial hygiene team to be interested in two things only . . .

discovering whatever health hazards exist in your plant . . . devising ways to control or correct them.

More. The industrial hygiene engineer can be depended upon to clear up unhealthy conditions in the most economical way. Finding a problem of dust control, he may recommend installation of a patented system . . . but, if it will work just as well, he is likely to suggest a simple system that can be built cheaply in the plant.

And he can coordinate all community facilities to help clear up a dangerous situation in your plant.

ANALYZING INDUSTRIAL DANGERS

The physician, the engineer, working to clear up a dangerous industrial condition, have behind them the industrial hygiene laboratory. Here skilled chemists make the analyses upon which doctor and engineer depend.

Examinations of personnel by the industrial hygiene team doctor have to be backed up by laboratory analysis of blood, of urine, other body secretions. The industrial physician employed by a plant, too, often makes use of this service.

In one eastern plant, recently, the doctor suspected that some of the men were being poisoned by mercury. He sent urine specimens to the state industrial hygiene laboratory. His diagnosis was confirmed by the chemists, and he could go ahead confidently to give the right treatment.

And the engineer's observations at the plant must be backed up by a whole series of tests in the laboratory . . . tests of air samples, to see whether they show an overload of poisonous substances . . . tests of raw materials, of solvents, paints, and so on, to see whether anything used in the process of manufacture is making men sick.

Improving your nursing service

The industrial hygiene division of your health department is ready to help you establish a nursing service, or improve the one you have. Ask for assistance . . . and the nursing consultant will come and make a study of your plant, with the purpose of solving its specific problems.

The plant too small to warrant a doctor in full-time service can furnish adequate medical care for its employees with a doctor part-time or on call and a well-planned nursing service.

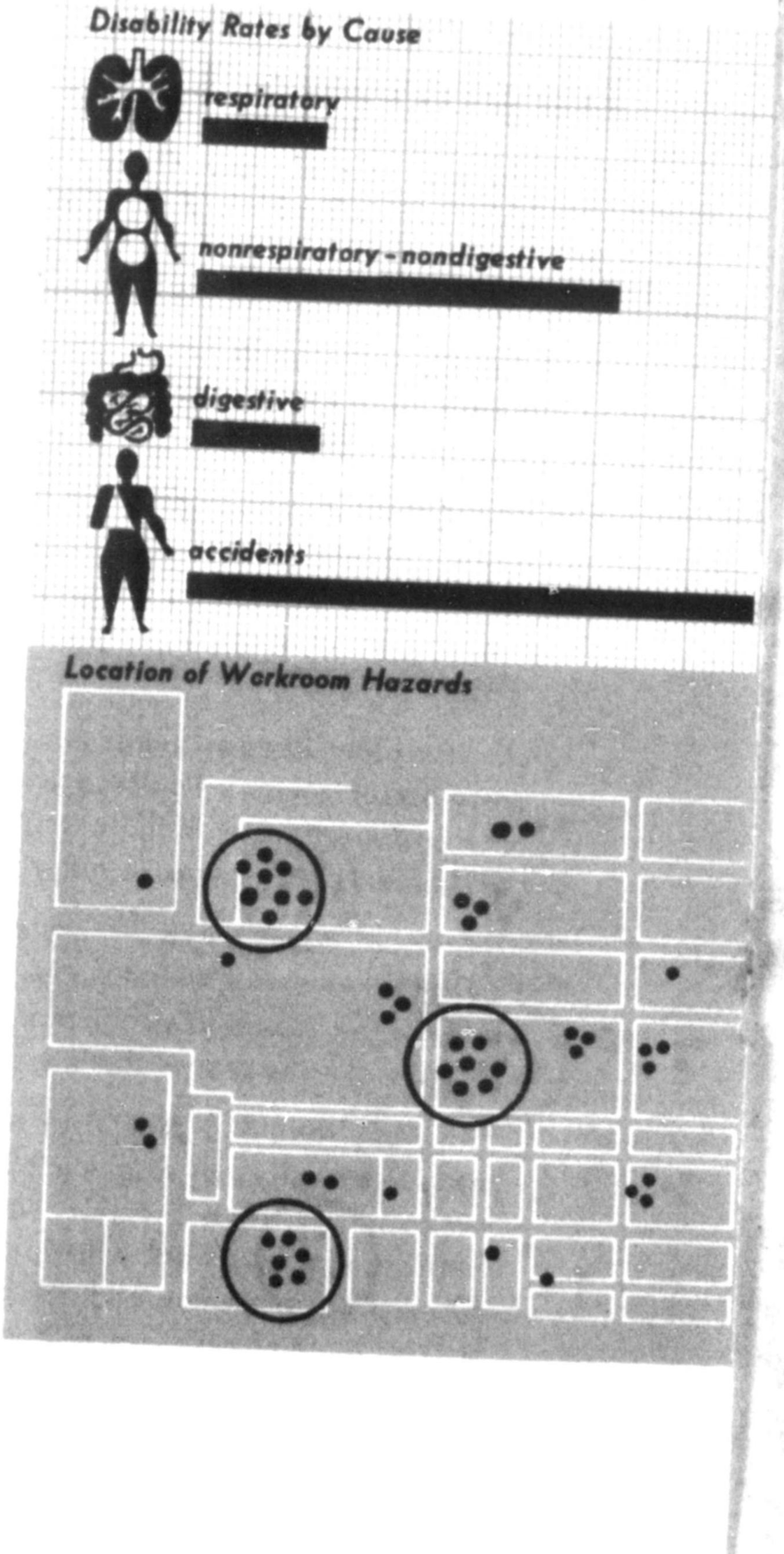
But industrial nursing is a special field, needing special knowledge and skills. Management can expect the full benefits of a nursing program only if it is staffed with nurses who understand the materials, processes, and illnesses of industry. The nursing consultant will help you find such qualified industrial nurses.

If your plant already employs nurses, the nursing consultant can still be very useful to you. For through this consultant your own nurses can keep in constant touch with the practices and methods of the most successful nursing services in your industry. They have only to ask for this help.

But your budget for health protection doesn't permit a nursing service? Let the nursing consultant study your problem. If a part-time industrial nurse is the answer to your needs, the consultant will make arrangements for you with the proper community nursing agency.

How big should a plant be, to need nursing service? The need is measured really not so much by the plant's size as by the dangers its workers face. But practice has shown that a plant with a hundred employees may profit by having a full-time nurse. Where from 300 to 600 persons are employed, it's best to have two or more nurses. And at least three nurses are necessary for the plant with a thousand workers.

KNOWLEDGE THROUGH RECORDS:



Individual Sickness and Accident Record

SEVERE INJURY — SURGICAL [illegible]

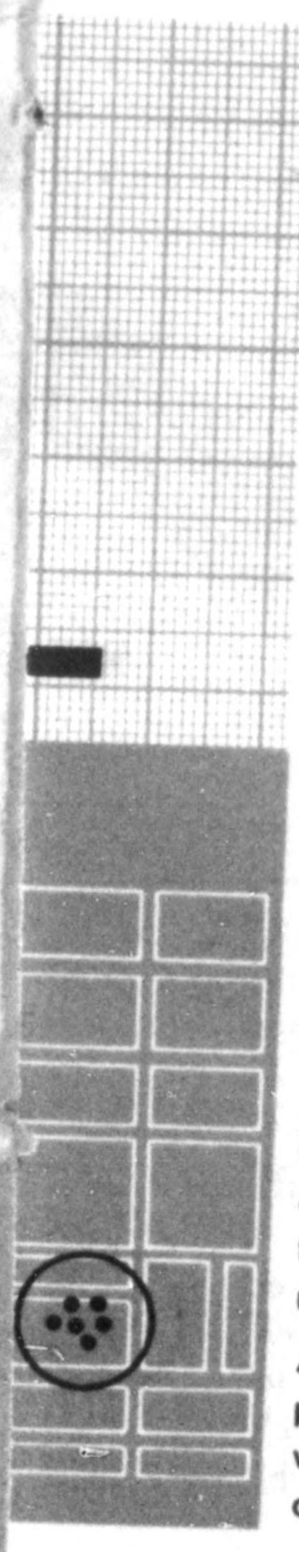
NAME	GIBOROWSKI, Joseph M	DATE OF ONSET	Tue. June 6, 1939 — 11:15 A.M.
ADDRESS	14 S. Potomac St.	DATE OF REPORT	" " " — 11:20 A.M.
CLOCK NO	1-174 PLANT E.A.	AGE 31	DEPARTMENT BODY
FOREMAN	Draper	OCCUPATION	Utility Man — LOCATION PA-18-19

EMPLOYEE'S STATEMENT: "I was dieing, when something struck me in the eye. I think it came from a workman next to me who was grinding. I was not wearing my goggles"

DIAGNOSIS: Metallic foreign body deeply embedded in cornea, right eye, edge of pupil, 4 o'clock

TREATMENT: Surrounding corneal tissue appears burned. Foreign body is deeply embedded close to the pupil.---send to specialist — TREATED BY Dr.F. M.A.

Sent to Dr. Anderson, -- left 11:40 A.M.
returned 1:10 P.M.



Your plant employs watchmen to guard against theft or damage to property. Modern, progressive plants are employing another kind of watchman . . . a watchman to catch—

the thief of time . . . the thief that steals man-days from production . . . costly, wasteful, avoidable sickness. Medical records and reports are to your plant what bookkeeping is to your business office. Like cost accounting, they're a wall against waste . . . waste of time and money.

How can you employ this watchman to guard your plant?

You can call upon your industrial hygiene bureau to plan for you and help your medical department set up a sound, modern system for keeping track of health and safety.

A good system of industrial medical records covers every employee in the plant from the day he's hired to the day he leaves. It shows the record of all his injuries and illnesses, and their duration. It makes possible proper job placement in relation to physical condition. When this injury-by-injury, sickness-by-sickness record is summarized for the whole plant, spot-mapped to show which departments have the most sickness and injury . . . you have another thing of great value. For your safety director, your engineer, and your medical department have the guidance they need to do their work efficiently. Corrective measures can be taken when they're least expensive and most effective . . . before serious trouble strikes.

It sounds complicated and expensive? But it isn't. The medical director in a major division of one great corporation has found that it takes little more than a minute per case to keep an extremely effective record system going.[1]

Already sickness and injury records are being kept on a large proportion of American workers. Your plant, too, should be among those which protect themselves and their employees with this modern weapon of knowledge.

[1] "Records—The 'Seeing Eye' of Industrial Medicine," by William J. Fulton, M. D., Industrial Medicine, Vol. 13, No. 1, January 1944.

Inventory for Health

What business enterprise could do without regular inventory?

The plant that takes inventory of its health and safety situation regularly is just as sensible as the man who protects his personal health by getting a complete physical check-up once a year. It's protection where it counts . . . nipping serious trouble in the bud instead of waiting until it has developed into something expensive and hard to cure.

Your industrial hygiene bureau stands ready to give you this kind of preventive service. It should be done regularly, on schedule.

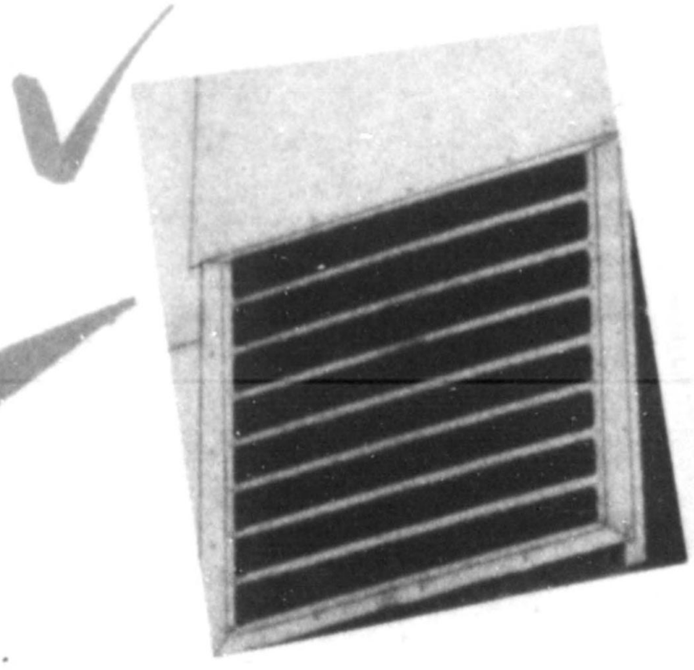
Maintaining healthful working conditions in the plant is as important as setting them up in the first place.

You spend a substantial sum to have ventilation equipment installed for drawing off toxic fumes or dust. But unless there's a regular re-survey to make sure the equipment is doing its job, the sense of security resulting from this expenditure is likely to be false—and expensive.

A manufacturer spent a sizeable amount for down-draft ventilation under worktables where hundreds of girls were assembling certain war materials. It was a good system, installed on the recommendation of industrial hygiene engineers. But after a time the girls began to complain of headache and dizziness. One after another stayed home a day or two each week, or quit her job. The manufacturer asked for a re-survey of his plant.

It wasn't hard for the engineers to locate the trouble. These girls were using rubber cement . . . and as each brushful was lifted from pot to part, it dripped a little on the ventilator grid. The grids had become so covered that the girls were breathing poisonous vapors. The cure was simple—a guard placed on each table so that ventilators were kept clear.

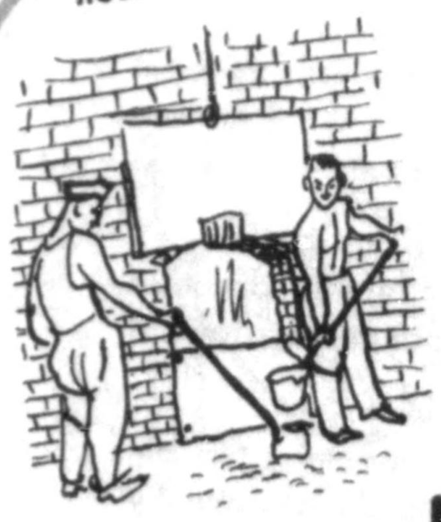
Sometimes management fears that workers may become alarmed over health conditions in the plant when they see another industrial hygiene survey being made. But experience has shown the exact opposite to be the case. Employees are reassured when they know there's scientific control of health conditions in their plant. They know the company is doing everything in its power to protect them.



ventilation

lighting

heat and humidity control



fumes

PARTNERS IN HEALTH PROTECTION

Should industry concern itself with the general state of health of its workers . . . with those causes of illness that aren't directly the result of work processes and working conditions?

Important as it is to clear up industrial sickness as the cause of absence from work, its seriousness is far overshadowed by sickness of non-occupational origin. For this, too, industry and workers must pay . . . pay through lowered production, through loss of wages, through family disaster. And pay as well through taxes . . . the cost of finding and treating those diseases at present accepted as a public responsibility.

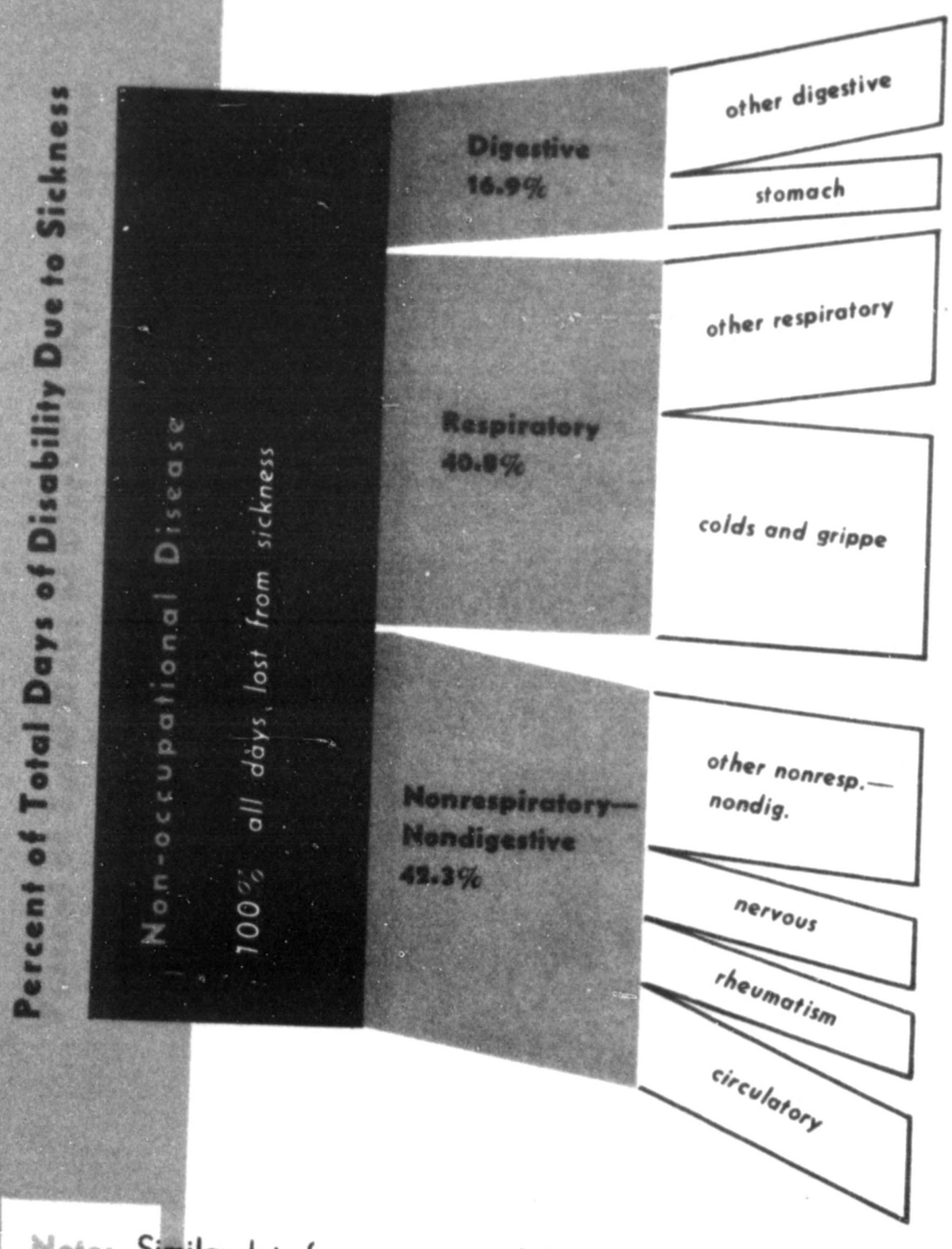
Working together in partnership, management, unions, health departments of city, county, state, and nation, and the family doctor, can raise the health level of all employees . . . can wipe out at least some of the diseases that kill or cripple.

Their place of work is the best place to reach your employees with health protection of many kinds. X-ray to find tuberculosis in its early stages . . . tests to locate venereal disease . . . immunization against smallpox and typhoid . . . a program to find dangerous dental conditions and clear them up . . . early spotting of mental disease, to prevent personal tragedy and perhaps a lifelong burden on the public . . . these are only some of the helps that can be brought to your plant, with benefit to management and workers.

The nutrition of your workers can be improved. Health education through a plant program can teach them to follow modern ways toward better health.

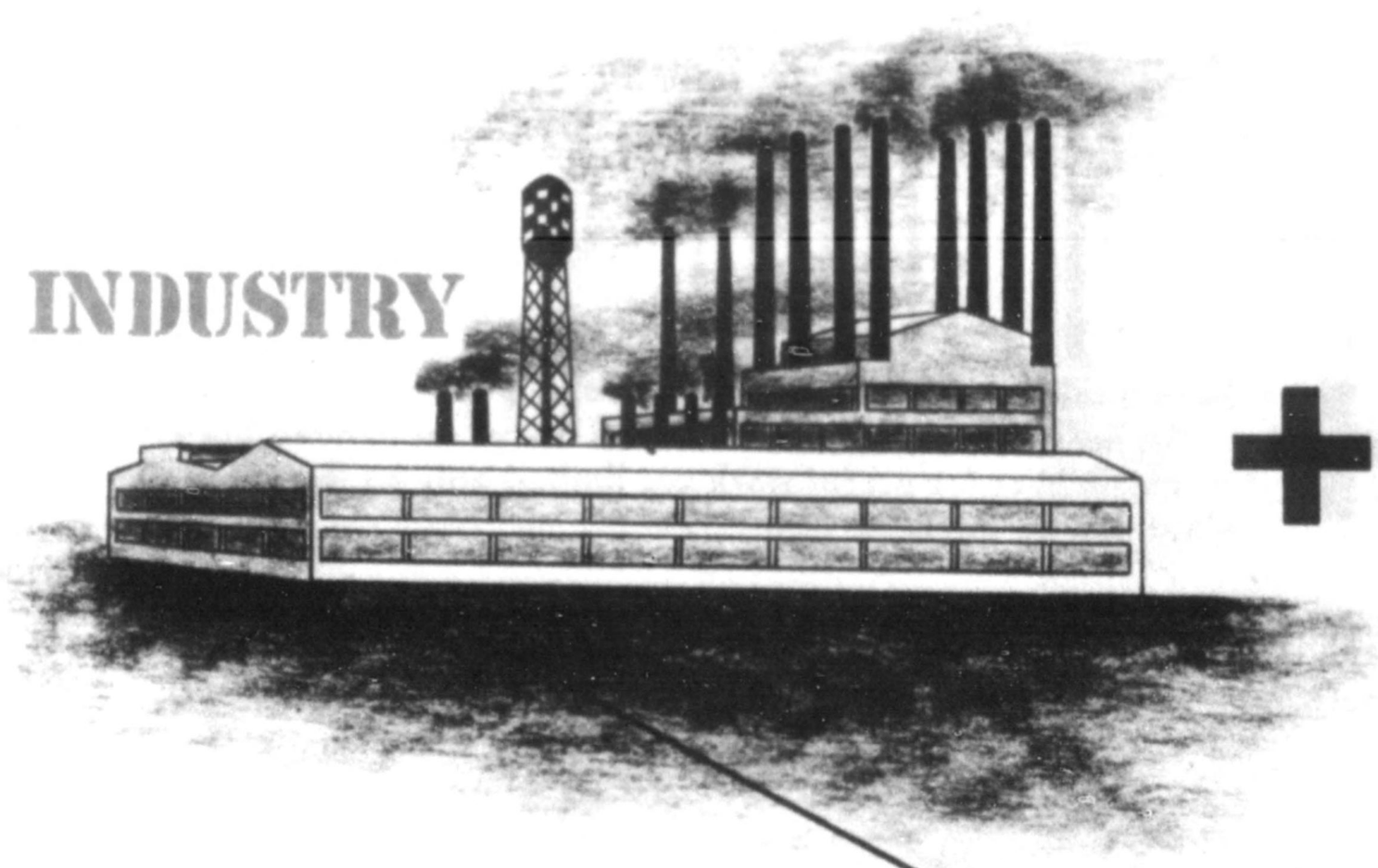
Let your **industrial hygiene bureau** be your full partner in this big job. It is ready to act as liaison between your plant and every agency of community, state, and nation which works in health protection. It is ready to serve as counsel to management and labor unions in all problems of health.

Such a partnership has won the endorsement of many leaders in the industrial, labor, and medical life of the United States. Its possibilities for useful work are limited only by the vision of what can be done.



Note: Similar data for occupational diseases not available.

INDUSTRY



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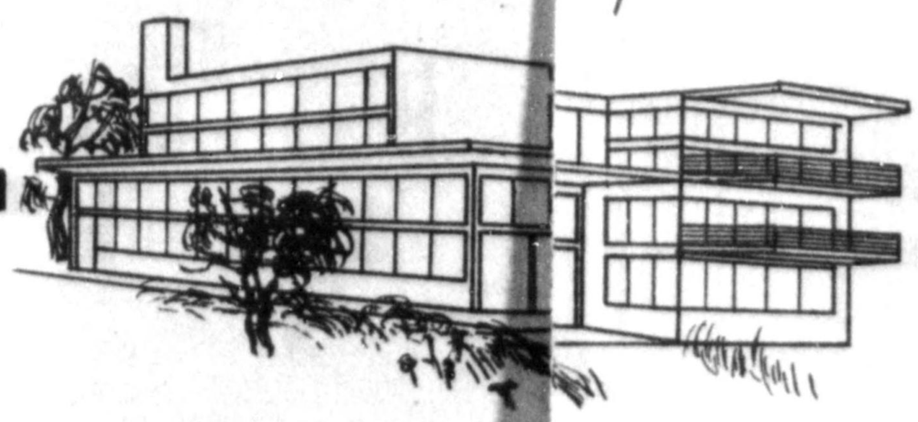

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STAT
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PUBLIC HEALTH PROGRAM

the health of the worker

+

STATE, LOCAL & FEDERAL GOVERNMENT

CALL

health service to aid you!

There's a new viewpoint developing rapidly in American industry . . . the understanding that industrial enterprise benefits by everything that benefits workers—and health is first in importance. Labor unions more and more are feeling that they, too, must carry responsibility for health.

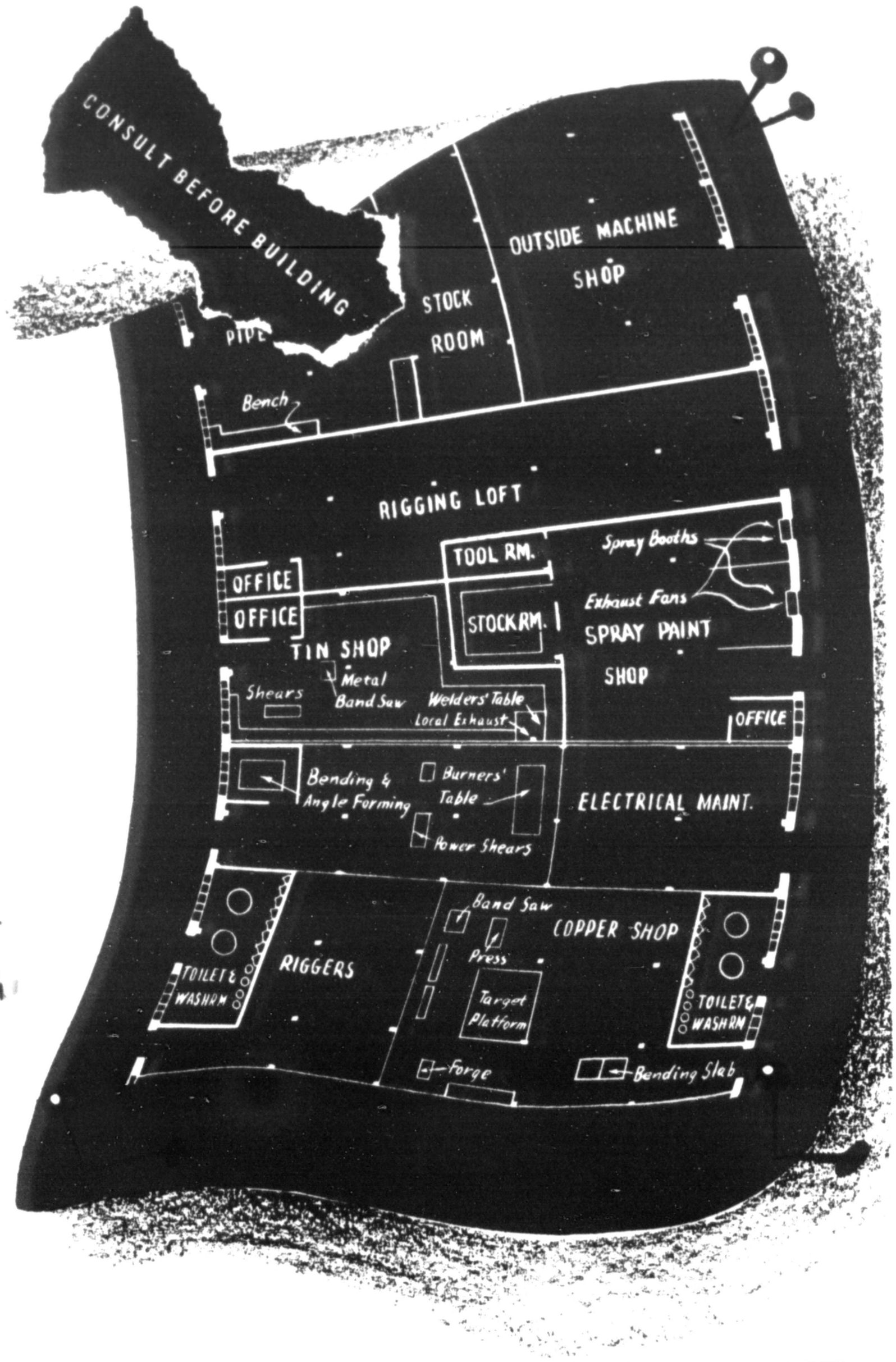
Many of the great industries of the United States are completely convinced, on a dollars-and-cents basis. They're going ahead with large and carefully planned programs for health and safety. And smaller plants are starting health programs as their value becomes clear.

Make use of your industrial health agency. Consult with it before setting up a medical department, or making administrative changes that affect the health of employees.

And before building a new plant or making important alterations, ask these experts to plan with you, so that sound and modern methods of health protection can be built into the structure . . . not added expensively after harm already has been done.

Call in your State or local **Division of Industrial Hygiene** . . . so that your employees, too, can say with confidence and pride . . .

"It's a healthy place to work!"



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U. S. PUBLIC HEALTH SERVICE

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SOON there will be

Eighteen Teaching Charts on Maternity and Family Living

Published and copyrighted 1946 by
MATERNITY CENTER ASSOCIATION
654 Madison Avenue, New York 21, N. Y.

Photographs by Erich Kastan Designs by Fred Tobey

3

HOW TO USE THESE CHARTS

The RIGHT Use for the RIGHT Poster

The poster is one of the best channels for reaching people with facts about health. It can reach, as so many other media cannot do, right to the very group who need certain facts most. This can be achieved by displaying the poster in places where these people are most likely to see it.

If the poster is to be used successfully, however, the right poster must be selected and displayed at the right time and place.

There are two kinds of posters with two entirely distinct and different purposes. The first is the SIMPLE POSTER which teaches one idea colorfully and emphatically in a brief moment of time. The second is the EDUCATIONAL CHART which teaches a number of facts over a longer period of time. Often the EDUCATIONAL CHART needs an instructor to make its message clear. With its many ideas, its smaller print, it cannot serve as a SIMPLE POSTER. But if displayed in a place where people, who are concerned with the facts in the chart, have time to study it by themselves, it can drive home a number of

points in orderly fashion. In hospital and clinic waiting room, at a health center, at mothers' and fathers' classes, at a staffed exhibit in a county fair, the EDUCATIONAL CHART ranks high among materials in the health education repertory.

These are EDUCATIONAL CHARTS

This series of eighteen educational charts tells a continuous story from "Soon There Will Be Three" to "Now We Are Three". It can be displayed as a unit to drive home the fact that the coming of a baby is not a separate experience in life, but is related to all of living. The hundreds of little details will be submerged by the continuous story of the coming of a baby. If the needed thirty to thirty-five feet of wall space is available to display this complete set in a single line—the eighteen posters tell this story in a human and personable manner.

If the details of the charts are to be emphasized—then they should be displayed either singly or in groups. Each chart tells a simple story and can stand by itself as teaching material. In groups, they can teach such facts as: The Coming of a Baby Is a Family Affair, Good Medical Care Is Important in Safe Maternity, Getting Ready for the Baby at Mothers' and Fathers' Classes, Healthful Living Before and After the Baby Comes, Planning for the Baby, It's Fun to Have a Baby, Some Food Facts for an Expectant Mother, Rest and Relaxation, Learning About Labor, Mother's and Baby's Things, Confidence During Pregnancy, etc, etc.

Many of these charts serve interchangeably in these various groupings, and thus, have a longer period of usefulness.

A few suggestions for using the charts in groups:

POSSIBLE COMBINATIONS

The Coming of a Baby is a Family Affair

1—Soon There Will Be Three
6—Living in Balance
8—Fathers' Class
13—Labor and the Baby's Birthday
14—Reward
17—Health Assurance
18—Now We Are Three

Good Medical Care Is Important in Safe Maternity

1—The Maternity Dollar Buys Quality
2—Prescription for Living
7—Time to Add More Protein?
10—Two Months To Go
15—Labor and the Baby's Birthday
17—Health Assurance

Getting Ready for the Baby at Mothers' and Fathers' Classes

1—Soon There Will Be Three
5—Information Please, at Mothers' Class
8—Fathers' Class
11—Knowledge of Labor Banishes Fear
12—Baby's Needs Are Few and Sensible
13—Labor and the Baby's Birthday

Healthful Living

1—Soon There Will Be Three
3—Prescription for Living
4—Rest and Exercise
5—Information Please, at Mothers' Class*
7—Four and One-Half Months
9—Pert and Pretty
13—Labor and the Baby's Birthday*
14—Reward
15—Cosy
16—Easy Does It
17—Health Assurance*

Planning for the Baby

1—Soon There Will Be Three
2—The Maternity Dollar Buys Quality
3—Prescription for Living
5—Information Please, at Mothers' Class
6—Living in Balance*
11—Knowledge of Labor Banishes Fear
12—Baby's Needs Are Few and Sensible
13—Labor and the Baby's Birthday*
14—Reward
17—Health Assurance*
18—Now We Are Three

It's Fun to Have a Baby

1—Soon There Will Be Three
3—Prescription for Living
6—Living in Balance
9—Pert and Pretty
12—Baby's Needs Are Few and Sensible
13—Labor and the Baby's Birthday*
14—Reward
15—Cosy
17—Health Assurance
18—Now We Are Three

*The charts marked with an * can be omitted if you do not have enough wall space.

Price of SOON THERE WILL BE 3	Per Set
Single set.....	$2.50
In lots of 10 to 20 sets.....	2.25
In lots of 20 or more sets...	2.00

(Postage and shipping charges prepaid)

These charts are available in sets only

A34

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Field Study of the Prevalence of the Clinical Manifestations of Dietary Inadequacy

WILLIAM J. DARBY, M.D., PH.D., AND
D. F. MILAM, M.D., F.A.P.H.A.

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Field Study of the Prevalence of the Clinical Manifestations of Dietary Inadequacy*†

WILLIAM J. DARBY, M.D., PH.D., AND
D. F. MILAM, M.D., F.A.P.H.A.

North Carolina State Board of Health, Chapel Hill, N. C.; and International Health Division, The Rockefeller Foundation, New York, N. Y.

THE statement that 30 per cent or more of the population of our country are malnourished rests primarily upon the results of dietary surveys,[1-4] the most extensive of which (1) was carried out under the economic conditions existing in 1934–1937. That the standards chosen for evaluation of such data markedly affect these conclusions is demonstrated by McHenry and coworkers.[5] Data showing the prevalence of certain biomicroscopic changes have also been interpreted to indicate an appalling incidence of subnutrition within certain groups.[6-8] Continuous nutrition surveys of the rural population of North Carolina[9-11] have indicated that the dietary intake of this population is not greatly different from that of many other groups which have been investigated.[5, 12-15] It seems pertinent, therefore, to report the prevalence of early physical signs of malnutrition as they appear in such a population. This paper is a summary of the physical findings which were observed during a nutrition survey of a representative sample of the rural population of Alamance County, North Carolina, during the 12 months, July, 1943, to June, 1944. An effort is made to evaluate the validity of such signs as an index to nutritional status.

The sample consisted of 959 individuals from 160 white and 39 colored rural families, selected as representative of this area. Details of the selection of the sample are reported in another communication.[11]

The survey methods were those which have been previously outlined.[9, 10] They included a medical history, a physical examination, a series of laboratory determinations on a blood specimen, and the recording of an individual 7 day food intake from which the average daily intake of the various nutrients was calculated by use of food tables. The laboratory procedures included the determination of plasma ascorbic acid,[16] plasma vitamin A and carotene,[17] erythrocyte counts, hemoglobin,[18] and total plasma protein and plasma albumin. The latter two determinations were carried out on approximately 50 per cent of the subjects, using a semi-micro Kjeldahl technique.

During the physical examination especial attention was directed to those signs which have been considered indicative of malnutrition,[19, 20] including: vascularization of the cornea, circum-

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* Based on a paper presented before the Epidemiology Section of the American Public Health Association at the Seventy-third Annual Meeting in New York, N. Y., October 4, 1944.

† The studies and observations on which this paper is based were carried out as a coöperative project by the North Carolina State Board of Health, Duke University School of Medicine, and the International Health Division of The Rockefeller Foundation.

corneal injection, angular fissures of the mouth, tongue changes, alterations of the buccal mucosa, and skin changes, attributable to riboflavin deficiency; skin and conjunctival changes, attributable to vitamin A deficiency; gingivitis, to ascorbic acid inadequacy; neurologic alterations, to thiamin deficiency; gross tongue and skin changes, to niacin inadequacy, and minimal edema, to low protein dietary.

RESULTS AND DISCUSSION

Weight—Height-weight-age comparisons were made with standard tables.[21] Children under 15 years of age whose weights deviated from these standards by ± 10 lb. and adults whose weights deviated from them by ± 20 lb. were considered overweight or underweight. If it is assumed that these variations in weight are primarily due to a caloric excess in the case of the obese or to a caloric deficit in the underweight group, then some 29 per cent of 739 white individuals and 24 per cent of 205 colored persons were malnourished from a standpoint of calories. These incidences are given in Table 1.

TABLE 1

Percentage Incidence of Underweight or Overweight Individuals in a Representative Sample of the Rural Population of Alamance County, North Carolina

	White			Colored		
Age	Underweight Per cent	Overweight Per cent	Total Number Examined	Underweight Per cent	Overweight Per cent	Total Number Examined
Under 15 years	14.3	4.3	350	11	6	107
Over 15 years	22.3	16.4	389	12	19	98
Total	18.4	10.7	739	12	12	205

Particular attention is directed to the high incidence of obesity among the adults. This was greater in the women. The association of obesity with increased death rates has been generally recognized,[22–25] and it can no longer be doubted that obesity is due to an excess caloric intake. It would appear, therefore, that here is a common unquestioned form of malnutrition occurring in some 15 to 20 per cent of the total adult population, but which has been too generally ignored.

Nutritional Edema—Clinical evidence of protein deficiency rests upon the presence of an otherwise unexplained edema or a lowered plasma albumin concentration. No cases of marked edema were encountered in this survey. Of the 29 cases of minimal edema of the lower extremity which were observed in the examination of 748 white subjects, only 2 women had an edema which was not readily correlated with some other clinical condition, such as varicosities, hypertension, pregnancy, or history of thrombophlebitis. These 2 women had plasma albumin concentrations of 4.0 and 3.7 gm. per cent. Eleven of 376 plasma albumin concentrations were less than 4.0 gm. per cent. Eight of these were unassociated with edema. The lowest level encountered, 3.4 gm. per cent, was well above that which Moore and van Slyke[26] found associated with clinical edema. No protein deficiency edema was detected in the colored group. Only 3 of the 142 determinations on non-pregnant colored individuals were below 4.0 gm. per cent. It is concluded, therefore, that clinical protein deficiency was not found in this survey and is probably of no significance in this region.

It is true that the 8 pregnant women upon whom plasma albumin determinations were made had values ranging from 3.4 to 3.8 gm. per cent with correspondingly low total proteins. Three of the women had edema. There is

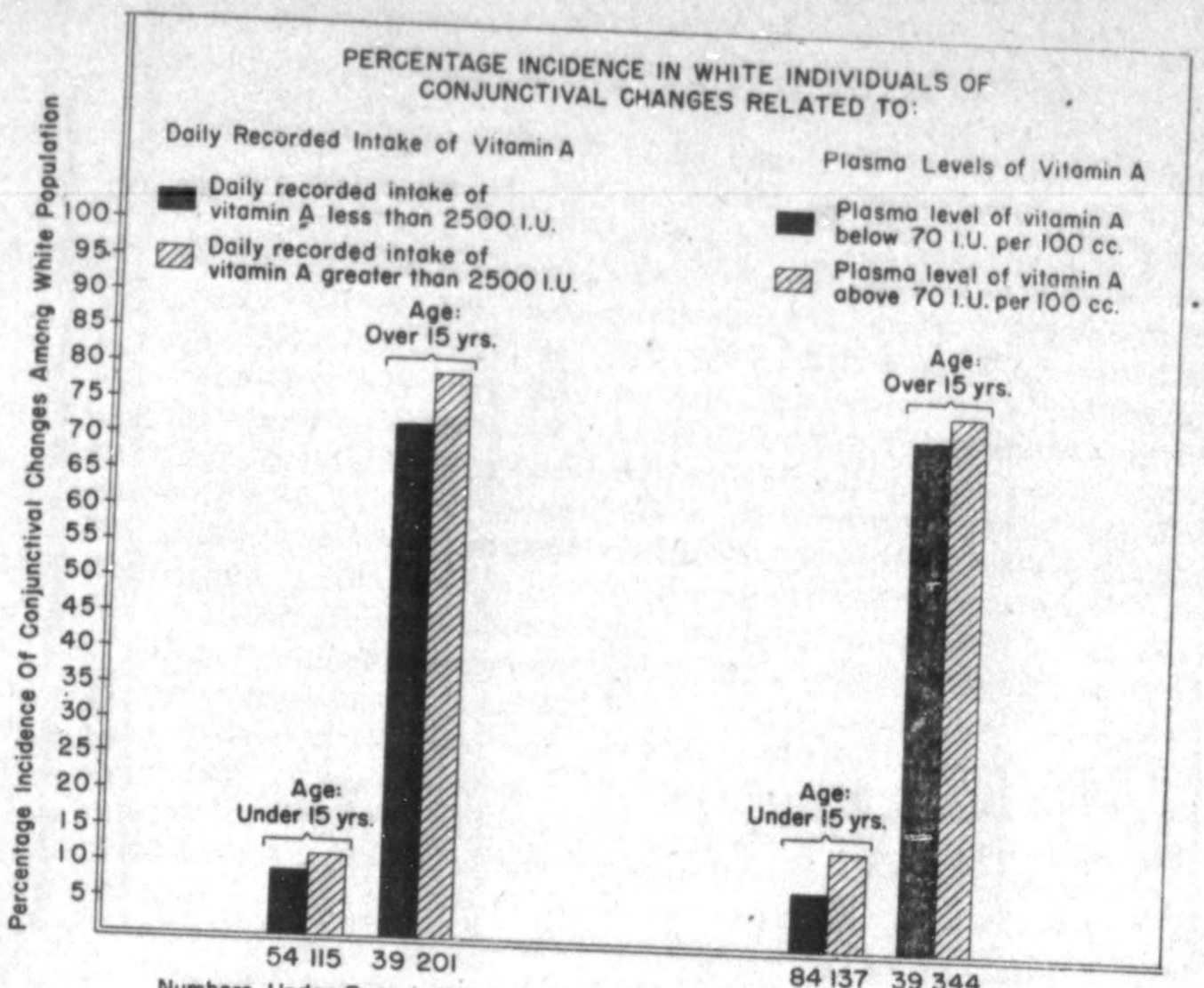

FIGURE I

insufficient evidence, however, to assign these findings to a nutritional basis.

Anemia—Hemoglobin values below 12.0 gm. per 100 ml. occurred in 18.5 per cent of the 244 white children and 60 per cent of the 86 colored children examined. Hookworm and malaria are not prevalent in this area, and stool examinations on a number of the children revealed no parasitic infestation. Iron intake records do not assist in interpreting these lower values. Some further evaluation of the normal limits of hemoglobin for children of the two races is badly needed.

Of 49 white women who exhibited hemoglobin values below 12.0 gm. per cent, 21 had a history of recent excessive blood loss, concurrent pregnancy, or some pertinent coexisting disease. This leaves 12.4 per cent of 226 adult white women with hemoglobin concentration below this arbitrary level, which might possibly be attributed to a nutritional cause. Similarly, 12 of 57 colored women (21 per cent) had unexplained low hemoglobin values. The influence of numerous other factors would have to be ruled out, however, before one could definitely assign all of these to dietary deficiencies. Only 2 of the 200 adult males examined had unexplained values below 12.0 gm. per cent.

Eye Signs—The corneas and conjunctivas of each individual were examined grossly and with a slit lamp. Approximately 10 per cent of the white children and 75 per cent of the white adults exhibited conjunctival changes which have been attributed to vitamin A deficiency.[6] Similar incidences were noted in the corresponding colored groups. From an examination of

Figure 1, however, it is obvious that these changes did not occur more frequently in the persons with either a low recorded intake of vitamin A or with low plasma values of the vitamin than they do in corresponding groups with higher intakes or plasma levels. Such changes, therefore, are not indicative of vitamin A deficiency in this population. These findings are in keeping with the high dietary intake of vitamin A by this population, which has a mean intake approximating or exceeding that of the Recommended Dietary Allowances for this factor.[11]

Corneal invasion, interpreted by some as specific evidence of riboflavin deficiency[45] occurred in 4 per cent of 645 white persons observed. Only 1 colored person with minimal invasion was found in the group of 174 observed. This difference in the two races has been previously noted.[27, 28, 10] It is particularly striking because the mean riboflavin intake of the colored group was generally slightly less than that of the white group. The presence of dilated vessels or of a large number of loops within the corneal limbus has been attributed by some to a deficiency of riboflavin. These signs, too, were less frequently seen in the colored population. Thus, 76 per cent of the white adults observed had such vessels, as contrasted with 54 per cent of the corresponding colored group.

In Figure 2 the white group is divided into two populations: one with daily recorded riboflavin intakes less than 1.35 mg. and the other with daily recorded intakes above this figure. The percentage incidences of corneal vascularization or of prominent limbic vessels is indicated by the height of the

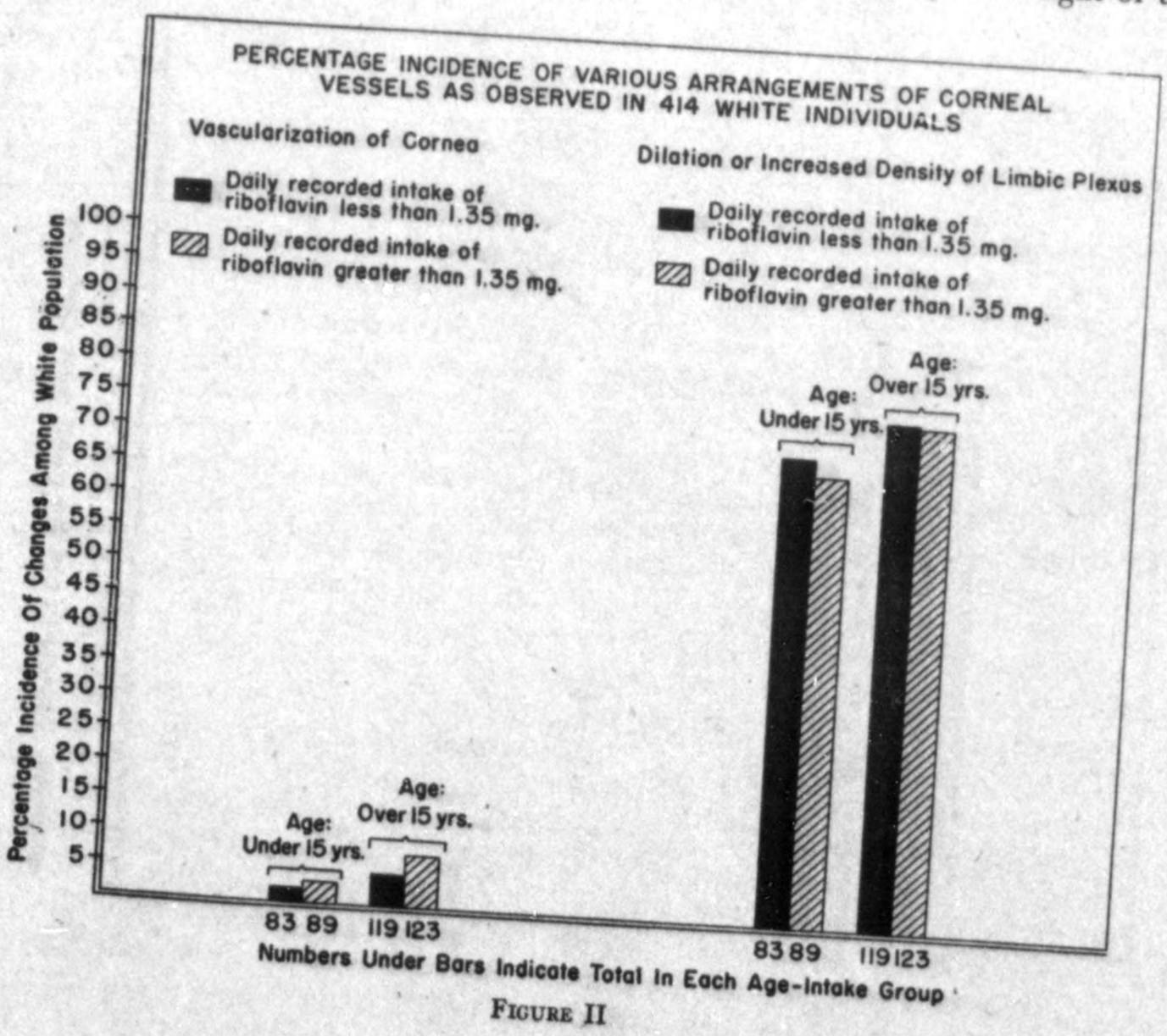

FIGURE II

bars. It is obvious that neither of the corneal signs was met more frequently in the low intake group. A limited number of the individuals with definite corneal vascularization were treated with 15 mg. of riboflavin daily and observed for periods up to 8 weeks. In no case did the vessels empty. Such evidence would indicate that these changes are not a reliable index of riboflavin deficiency in this region. The specificity of gross and biomicroscopic changes in the eye has frequently been questioned or denied.[10, 27–38]

Angular Fissures — Twenty-five of 748 white persons examined (3.3 per cent) had fissures at the angles of the mouth or scars probably indicative of recent lesions. In all but 4 of these the fissures were directly attributable to recent trauma, adentia, malfitting dentures, or anemia. Of these 4, only 1 had a recorded intake of less than 0.7 mg. of riboflavin. Only 1 colored individual of the 211 examined presented an angular fissure. This man had no other evidence of riboflavin deficiency, in fact, he had a recorded average daily intake of 1.9 mg. of riboflavin. Other signs which might suggest niacin deficiency were seen in none of the subjects with fissures.

Tongue Changes—Tongue changes similar to those occurring in ariboflavinosis [39] were found in only 3 individuals, all white adults. Two of these had a definite anemia. The recorded riboflavin intakes ranged from 1.1 mg. to 3.3 mg. per day.

Buccal Mucosa — Asymptomatic changes in the buccal mucosa characterized by edema, desquamation, and the presence of plaques have been suggested as of value in diagnosing riboflavin deficiency in white persons.[40] Sixteen per cent of the adults and 2.2 per cent of the children had mucosal changes similar to those described. The mean recorded daily riboflavin intakes for these groups were: children, 1.0 mg., adult males, 1.9 mg., adult females, 1.3 mg. Such intakes are of the order of magnitude of the means obtained for comparable groups throughout the survey.

Evidence of Pellagra—Only 1 case of pellagra has been reported from Alamance County within the past 5 years.[41] Nρ cases were seen during the survey. Discussions with physicians in the county verified the belief that pellagra was essentially nonexistent there. Four of the white subjects gave a history compatible with pellagra in the past; the most recent such illness had occurred in 1934. Two of these individuals had lost the vibratory sense over the sock region, one had slightly pink, atrophic skin over the dorsum of the hands.

Biomicroscopic examination of the tongue was not carried out. Any tongue which appeared abnormal on careful gross examination was scrutinized with a hand lens. No cases of the scarlet-red tongue of niacin deficiency were seen. Twenty-nine of the 748 white persons and 32 of the 211 colored persons examined had hypertrophied fungiform papillae or questionable flattening of the filiform papillae. The significance of these findings is difficult to evaluate, for none of the subjects presented other physical evidence of specific deficiencies. The many extranutritional causes of such changes—local irritation due to carious teeth, ill-made denture, smoking, the recent drinking of hot beverages, and the like —must have contributed materially to this percentage.

Neurologic Changes—No advanced cases of peripheral neuritis were encountered. It has been found that symmetrical loss over the lower extremities of vibratory sensation to the frequency 256 is the earliest detectable sign of thiamin deficiency.[42] This sign was considered as a screen in analyzing the records. Analysis of the data is

limited to persons below 50 years of age because alteration in vibratory sensation of varied origin is frequent in individuals over 50 years of age. No alteration of vibratory sensation was noted in the children of either race. Ten (5 males and 5 females) of 306 white adults under 50 years of age exhibited loss of vibratory sensation in the toes or sock region. None of these presented any other neurological signs; 1 had a past history of pellagra, another was on a "bland diet" supplemented with "vitamin pills." The calculated daily thiamin intakes for the group ranged from 0.7 to 1.7 mg., with a mean of 1.1 mg. Of 85 colored adults under 50 years of age vibratory sensation was absent in 3. One of these was on a diet for peptic ulcer. No other neurological findings of significance nutritionally appeared within this group.

If the assumption were made that all of the above mentioned abnormalities were evidence of thiamin deficiency, the maximum incidence would be placed at 3.3 per cent of the adult population, or at 1.5 per cent of the total population. It is probable that the true incidence is considerably less than either of these figures.

Other signs of B-complex deficiency, such as skin changes and circumcorneal injection, were equally uninforming in an effort to obtain evidence of the prevalence of deficiency states.

Gingivitis—No cases of the livid, bleeding gums of scurvy were seen. Grossly visible swelling of the gingival margin, increased redness, or the appearance of exudate upon pressure was termed gingivitis. Fifty (14 per cent) of 357 white children and 5 (4.5 per cent) of 111 colored children had some degree of gingivitis. Two hundred (51 per cent) of 391 white adults and 54 of 100 colored adults were affected.

The survey population was divided into two groups for comparison—one with plasma vitamin C values less than 0.3 mg. per 100 ml. and the other with values above 0.3 mg. per 100 ml. Twenty-seven per cent of the white population and 31 per cent of the colored fell into the group with the lower levels. The difference in incidence of gingivitis between the groups within the two ranges of plasma ascorbic acid levels approached statistical significance in but two of the eight age-sex-color divisions. In fact, a slightly higher incidence of gingivitis occurred in three of the colored high plasma ascorbic acid groups. It is unlikely, therefore, that the marginal gingivitis here observed is due to the low plasma ascorbic acid levels. One gains the impression from the physical examinations that it is more probably attributable merely to poor oral hygiene.

Skin Changes of Vitamin A Deficiency—No cases of phrynoderma with or without xerophthalmia were seen. Among 748 white individuals examined the incidences of skin conditions which resembled those of vitamin A deficiency were: simple xerosis, 0.67 per cent; keratosis pilaris, 3.7 per cent; acneform lesions, 1.47 per cent. The corresponding incidences among the 211 colored were 2.8 per cent, 10.9 per cent, and 1.4 per cent, respectively. The means of the plasma vitamin A levels of none of these groups were lower than those of the means for the corresponding ages and sex within the survey as a whole. Furthermore, the mean recorded daily intake of vitamin A within these groups was equal to or higher than the means of the corresponding groups which did not show such signs. Many of the intakes were greater than the Recommended Dietary Allowances. Massive vitamin A therapy on a few of these individuals did not bring about any improvement. It appears that these skin conditions were not due to vitamin A deficiency and that the incidence of such skin changes is not an index of the vitamin A status of a

population at the nutritional level of that with which this survey deals.

Rickets—No x-ray or phosphatase studies were made. Two cases of active rickets were diagnosed in colored children on the basis of clinical findings. Three white children had bone deformities which might have been rachitic in origin.

Goiter—Six enlarged thyroid glands were noted among 391 white adults, 5 of which were in women. Three additional white women had undergone thyroidectomy. Seven enlarged thyroids with no histories of thyroidectomies were found among 100 colored adults. Six of these were in women. No goiters were observed in children of either race.

Fluorosis—One white and 1 colored person exhibited mottled enamel.

CONCLUSIONS AND SUMMARY

1. A representative sample of the total rural population of Alamance County, North Carolina, has been examined for manifestations of dietary deficiency states.

2. Physical examination and accessory clinical data indicate that in this area the most prevalent definite abnormalities attributable to malnutrition are underweight, obesity, and low hemoglobin concentrations of the blood. The latter is most prevalent in children and women.

3. The evidence here offered does not support the thesis that any serious dietary deficiency exists in this population. This is not to say that the diets of the majority of the people are satisfactory, but that whatever advantage is to be gained by dietary improvement will be in that region which cannot be assessed by most of the present-day clinical methods.

4. In a population with the nutritional level of the one here investigated the reported signs of early deficiency states, including biomicroscopic changes in the eye, are not considered specific for malnutrition and, hence, cannot alone be used to assess the nutritional status. This is not a refutation of the value of such diagnostic signs in a group existing at a genuinely low nutritional level such as may occur in the Orient, in war-torn areas,[43] or in the occasional patient in the medical clinic.[44] It will be necessary, however, to evaluate these signs in the study of any such population to which they are applied.

REFERENCES

1. Stiebeling, H. K., and Phipard, E. F. Diets of Families of Employed Wage Earners and Clerical Workers in Cities. *U. S. Dept. Agri. Circ. 507* (Jan.), 1939.
2. Wilder, R. M. Mobilizing for Better Nutrition. *Proceedings of the National Nutrition Conference for Defense*, May, 1941.
3. Report of the Committee on Diagnosis and Pathology of Nutritional Deficiencies, Food and Nutrition Board. Inadequate Diets and Nutritional Deficiences in the United States. Washington: *Nat. Res. Council, Bull.* 109, Nov., 1943.
4. Phipard, E. F. How Good Is Our National Diet? *Ann. Am. Acad. Political & Soc. Sci.*, 225:66, 1943.
5. Ferguson, H. P., Leeson, H. J., and McHenry, E. W. A Nutrition Survey in East York Township. II. The Influence of the Choice of Dietary Standards upon Interpretation of Data. *Canad. Pub. Health J.*, 35:66, 1944.
6. Kruse, H. D. Medical Evaluation of Nutritional Status. IV. The Ocular Manifestations of Avitaminosis A, with Especial Consideration of the Detection of Early Changes by Biomicroscopy. *Milbank Mem. Fund Quart.*, 19:207, 1941.
7. Kruse, H. D. The Lingual Manifestations of Aniacinosis, with Especial Consideration of the Detection of Early Changes by Biomicroscopy. *Milbank Mem. Fund Quart.*, 20:262, 1942.
8. Kruse, H. D. The Gingival Manifestations of Avitaminosis C, with Especial Consideration of the Detection of Early Changes by Biomicroscopy. *Milbank Mem. Fund Quart.*, 20:290, 1942.
9. Milam, D. F. A Nutrition Survey of a Small North Carolina Community. *A.J.P.H.*, 32:406, 1942.
10. Milam, D. F., and Anderson, R. K. Nutrition Survey of an Entire Rural County in North Carolina. *South. M. J.*, 37:597, 1944.
11. Milam, D. F., and Darby, W. J. Nutrition Survey of an Industrial Rural County, in preparation.
12. Riggs, E., Perry, H., Patterson, J. M., Leeson, J., Mosley, W., and McHenry, E. W. A Nutrition Survey in East York Township. I. Description of Survey and General Statement of Results. *Canad. Pub. Health J.*, 34:193, 1943.
13. Youmans, J. B., Patton, E. W., and Kern, R. Surveys of the Nutrition of Populations. Description of the Population, General Methods and Procedures, and the Findings in Respect to the Energy Principle (Calories) in a Rural Population in Middle Tennessee. Part 1. *A.J.P.H.*, 32:1371, 1942.
14. *Idem.* Part 2. *A.J.P.H.*, 33:58, 1943.
15. Youmans, J. B., Patton, E. White, Sutton, W. R., Kern, R., and Steinkamp, R. Surveys of the Nutrition of Populations. 3. The Vitamin A Nutrition of a Rural Population in Middle Tennessee. *A.J.P.H.*, 34:368, 1944.
16. Mindlin, R. L., and Butler, A. M. The Determination of Ascorbic Acid in Plasma. *J. Biol. Chem.*, 122:673, 1938.
17. Kimble, M. S. The Photocolorimetric Determination of Vitamin A and Carotene in Human Plasma. *J. Lab. & Clin. Med.*, 24:1055, 1938–39.
18. *Procedure for Oxyhemoglobin, Evelyn Photoelectric Colorimeter.* Phila.: Rubicon Co.
19. Jolliffe, N., McLester, J. S., and Sherman, H. C. The Prevalence of Malnutrition. *J.A.M.A.*, 118:944, 1942.
20. Youmans, J. B., and Patton, E. White. *Nutritional Deficiencies: Diagnosis and Treatment.* Phila.: Lippincott, 1941.

Dietary Inadequacy

21. *Food and Life, Year Book of Agriculture, 1939.* U. S. Gov. Ptg. Off., Washington, D. C., 1939, pp. 161–166.

22. Dublin, L. I., and Lotka, A. J. *Length of Life: A Study of the Life Table.* New York: Ronald Press Co., 1936, pp. 201–204.

23. Fisk, E. L., and Crawford, J. Ramser. *How to Make the Periodic Health Examination.* New York: Macmillan, 1927, pp. 343–346.

24. Newburgh, L. H. Obesity. *Arch. Int. Med.*, 70:1033, 1942.

25. Newburgh, L. H. Obesity. I. Energy Metabolism. *Physiol. Rev.*, 24:18, 1944.

26. Moore, N. S., and van Slyke, D. D. The Relationships between Plasma Specific Gravity, Plasma Protein Content, and Edema in Nephritis. *J. Clin. Investigation*, 8:337, 1929.

27. Youmans, J. B., Patton, E. W., Robinson, W. D., and Kern, R. An Analysis of Corneal Vascularization as Found in a Survey of Nutrition. *Tr. A. Am. Physicians*, 57:49, 1942.

28. Vail, D., and Ascher, K. W. Corneal-Vascularization Problems. *Am. J. Ophth.*, 26:1025, 1943.

29. Youmans, J. B., and Patton, E. W. The Laboratory Diagnosis of Nutritional Deficiencies. *Clinics*, 1:303, 1942.

30. Sandstead, H. R. Superficial Vascularization of the Cornea; Result of Riboflavin Therapy. *Pub. Health Rep.*, 57:1821, 1942.

31. Editorial. Riboflavin and Corneal Vascularization. *Brit. M. J.*, 1:545, 1943.

32. Stannus, H. S. Ariboflavinosis. *Brit. M. J.*, 1:645, 1943.

33. Fish, W. M. Acne Rosacea Keratitis and Riboflavine (Vitamin B_2). *Brit. J. Ophth.*, 27:107 1943.

34. Gregory, M. K. The Ocular Criteria of Deficiency of Riboflavin. *Brit. M. J.*, 2:134, 1943.

35. Kodicek, J. H., and Yudkin, J. Slit-lamp Microscope in Nutrition Surveys. *Lancet*, 2:753, 1942.

36. Scarborough, H. Circumcorneal Injection as a Sign of Riboflavin Deficiency in Man. *Brit. M. J.*, 2:601, 1942.

37. Metivier, V. M. Bitot's Spots in Trinidad. *Am. J. Ophth.*, 24:1029, 1941.

38. Berliner, M. L. Regarding the Early Detection of Avitaminosis A by Gross or Biomicroscopic Examination of the Conjunctiva. *Am. J. Ophth.*, 25:302, 1942.

39. Kruse, H. D., Sydenstricker, V. P., Sebrell, W. H., and Cleckley, H. M. Ocular Manifestations of Ariboflavinosis. *Pub. Health Rep.*, 55:157, 1940.

40. Sandstead, H. R. Deficiency Stomatitis. *Pub. Health* Rep., Sup. 169, 1943.

41. *Morbidity Statistics.* North Carolina State Board of Health. 1939–1943.

42. Graves, R. W. Personal Communication.

43. Adolph, W. H., Greaves, A. V., Lawney, J. C., and Robinson, H. L. Nutritional Disorders in Japanese Internment Camps. *War Med.*, 5:349, 1944.

44. Ruffin, J. M., Cayer, D., and Perlzweig, W. A. The Relationship between the Clinical Picture of a Mild or Early Vitamin Deficiency and Laboratory Determinations of Vitamin Levels. *Gastro-enterol.*, 3: 340, 1944.

45. Kruse, H. D. Medical Evaluation of Nutritional Status in *Handbook of Nutrition.* Chicago: American Medical Association, 1943.

BETROTHAL

by

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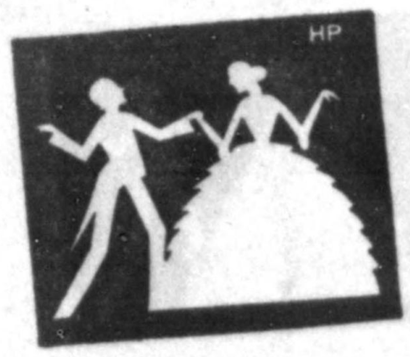

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BETROTHAL

by

Paul Popenoe
Director, American Institute of Family Relations

BETROTHAL is a purely human institution. It is not found among other mammals, where mating follows immediately after courtship. Indeed, it does not even exist, except in rudimentary form, among many peoples of low culture.

The engagement, or betrothal, period is an intermediate stage following the successful termination of courtship, when mating has been agreed upon but is to be consummated at some time in the future; and it is a marked feature of every high type of civilization.

While there are social, economic, educational, and other factors that play an important part in the maintenance of a definite period of betrothal, I shall here discuss only the biological functions, of which there are three that particularly deserve consideration.

1. The betrothal period makes possible a better sexual selection. A choice has been made, but it is more or less provisional. If, on closer acquaintance, the betrothed find that they have made a mistake, it can still be rectified before any permanent commitments have been entered into.

From this point of view, the social attitude toward betrothal should not be too rigid. Where betrothal is regarded as equally sacred and binding with marriage, this function is largely lost. Equal loss results from taking the betrothal too lightly—where it is merely regarded as a convenient cover for intimacies that would not otherwise be approved socially.

That the betrothal period does function effectively in permitting a change of mind, and therefore better sexual selection, is amply evidenced by the figures from license bureaus in those states which require advance notice before a marriage license is issued. In Los Angeles County, for instance, where three days' notice was formerly required (really five days, since the day of application and the day of calling for the license are not counted) this probationary period was responsible for the abandonment of many projected unions. In 1931, when about 20,000 couples appeared at the license bureau in person, and made application for marriage licenses, 1,200 of these couples failed to come back later and take up the license. This represents a change of mind on the part of 6% of the entire number. Examination of the unclaimed licenses

showed that in about one-third of the cases, there was a marked disparity of age, which probably was felt on further consideration, and in the light of comments of friends and acquaintances, to be undesirable. Others represented potential freak marriages, fraudulent marriages, drunken marriages, runaway marriages, and others in which the sexual selection was undoubtedly unfavorable.

In 1932, the County introduced an innovation by requiring payment in advance for the marriage license. Under these conditions, the number of abandoned romances was cut in half, only 600 couples failing to call for licenses for which they had already paid. Apparently, the requirement of a $2.50 fee was sufficient to make the difference between intending to marry and carrying out such an intention, in the case of some hundreds of persons.

Intelligent education, particularly in the high schools, will make this function of betrothal more effective, and will still further safeguard marriage.

2. The betrothal period is also an apprenticeship in mutual accommodation, so that the adjustment of two hearts to beat as one, even when they started with different rates of pulsation, does not have to be entirely carried out after marriage. At that time there are plenty of other adjustments to be made, and it is of great advantage to have as much as possible of this process of mutual accommodation

spread out over a period of some months or sometimes several years.

This process is hindered by the emotional tension which is the cause of the lovers' quarrels celebrated in song and story. Nevertheless, it does continue more or less steadily, depending on opportunities. Urban conditions are particularly unfavorable from this point of view, because of the lack of privacy, the fewer opportunities for young people to be together, and the fewer opportunities for them to take part in common activities, thus building up common interests and learning each other's attitudes and ideals.

A young man is asked, "I suppose you are pretty well acquainted with this young woman whom you are proposing to marry?" He replies, "Yes, indeed. We have been going together steadily for three years, and have been engaged for eight months." Yet, during all this time, neither one of them may have seen the other in any normal social setting, doing the things that other people of their kind do. He may know nothing about her home and family, which is perhaps a thousand miles away, and her chances of learning about his are even smaller. He has not even seen her among other girls. They have always gone out alone together, under conditions in which each was putting the best foot forward and endeavoring to make a definite impression. Later on, when he sees his bride as a "social animal" among other people, he is astonished

to find traits and characteristics which were, of course, there all the time, but of whose existence he did not dream because he never saw her in an environment that would call them out.

Thus, if the function of the betrothal period in promoting a gradual accommodation of attitudes and habits is to operate effectively, it must be given an opportunity to do so. Lovers should plan with this in view, while parents and friends should make a special effort to see that young people do have an opportunity to observe each other under all sorts of conditions. Needless to say, this is of equal importance before betrothal.

3. The betrothal period is a stimulus to biological and psychological maturation. During this period, the taboos, restrictions, and inhibitions which are maintained in ordinary social life begin to be broken down, so that the transition from mere acquaintance to complete intimacy does not have to be made so rapidly after the wedding.

This is particularly necessary since so many young people are brought up nowadays in cities, where they have no adult patterns of behavior. They do not have a chance to learn what the opposite sex is really like. Even if they have gone for years to co-educational schools, the student body is so badly socialized that many persons never get acquainted with human nature during this period. Moreover, many young people, especially under the conditions

of modern life in large cities, grow up to adult life in a stage of arrested emotional development, and it is a tremendous handicap to success in marriage to have one or both of the partners fixated at an adolescent, not to say an infantile, level of behavior.

Among some primitive peoples, particularly where the fertility of women was of great importance to prevent the group from declining in numbers, the betrothal period, or what corresponds to that in modern life, was essentially a period of trial marriage. If the woman became pregnant, it was equivalent to marriage, which was thereupon solemnized. If she did not become pregnant within a reasonable time, she was discarded as an undesirable, because probably barren, wife, and the man chose some other partner. A similar custom has prevailed in some peasant populations of Europe up to the present time. During earlier centuries, shortage of housing, restrictions on marriage of apprentices, and other economic features produced similar results.

A somewhat modified form of this custom has been brought into existence in Europe in recent years by a variety of social welfare enactments which benefit an unmarried woman, but do not apply to a married woman. This condition leads a man and woman sometimes to live together without any ceremony as man and wife, while the woman holds her job and retains the benefits of her unmarried status in social insurance and the like. A pregnancy

usually, though not always, leads to formal marriage. It is conceivable that the clamor in the United States during the past few years against allowing married women to hold jobs might occasionally produce a similar result.

Apart from this, it has been claimed that recent decades have witnessed an increase in sexual experience on the part of betrothed couples in the United States. Obviously, statistical proof of such a statement is impossible to obtain. Most of the testimony comes from physicians or others who are perhaps consulted for contraceptive information, and who would therefore see mainly the couples who were carrying on sexual relations during the engagement period. It seems unlikely that intercourse during the betrothal period is any more prevalent now in the United States than it was in Puritan New England, two or three hundred years ago.

Nevertheless, it is certain that many couples who, for economic, educational, or other reasons, think it necessary to postpone marriage, are asking whether they may not, as advised by radical reformers, profitably enter into a sort of unannounced trial marriage on this basis. An answer to the question can only be given after a study of results.

There is sufficient evidence, I think, in the testimony of those who are counseling on personal problems, to form a basis for an answer. On this basis, such intimacy appears to be dangerous to future success in marriage.

Some may, indeed, avoid difficulties, but this is not a justification for encouraging others in the same course, since instance after instance can be cited in which such pre-marital experience has either been a handicap to subsequent success in marriage, or has prevented marriage altogether.

An all-too-frequent result is unexpected pregnancy, which may bring about either a sudden and untimely marriage, with embarrassment and disruption of the couple's plans, or resort to an abortionist, with the serious physical and psychical dangers which that entails. But apart from pregnancy, the psychological results are found to be unsatisfactory in a variety of ways.

In surprisingly many cases, the husband later makes the fact of pre-marital sexual relations a basis for recrimination against his wife. When a quarrel subsequently occurs, as it does occasionally in any marriage, the husband has a ready weapon in declaring to his wife, "I knew I was making a mistake to marry you, but we had gone so far that I did not have the courage to turn back." How far this represents his actual opinion, and how far it represents merely a chivalrous masculine method of conducting an altercation is uncertain, but it is a poor basis for marital harmony and conjugal felicity. The situation is even worse when pregnancy has led to a forced marriage. None of the existing contraceptives is foolproof, particularly in the hands of young and inexperienced people. One of

the frequently recurring and quite unnecessary tragedies of modern life is the unexpected pregnancy, resulting from the fatuous acceptance by young people of the news that "science has now made it possible for woman to control her own destiny." Education in biology is one of the conspicuous deficiencies of almost every radical reformer.

Such unexpected pregnancy, of course, also destroys any utility that the betrothal might have had as a probationary period to ensure good sexual selection.

In other instances, one of the partners, particularly the wife, carries on into marriage a feeling of guilt, shame, and insecurity, which handicaps her indefinitely. This feeling may not be conscious to her, and may be brought to light only after some analysis. Sometimes it is manifested in the form of anger against the husband for his presumed unworthy treatment of her before marriage, and this may result in frigidity, as in several patients with whom we have dealt; or, in one instance, as a neurotic illness. In order to revenge herself on her husband, the wife simply became an invalid. In any event, it is clear that successful marriage is not promoted by this experience.

Again, the husband may later turn against his wife and distrust her, alleging that, if she was willing to give herself to him when not married, she might be quite capable of giving herself to other men afterward. In

fact, many cases are known to have ended this way.

Another common result of pre-marital sexual experience is disillusionment with marriage on the part of one or both of the partners. This was seen interestingly in a client who came to us not long ago, — a romantic young woman who had successful sexual relations with her fiancé during a period of two years before her marriage. Her feeling was, "If I enjoy this, think how much better actual marriage will be!" When she found after marriage that she had taken the edge off of that relationship, and that it was a complete disappointment to her romantic ideas, the feeling of resentment was so great that she became frigid, and had she not had help in the form of reeducation, the marriage would certainly have been disrupted before the end of the first year.

The supposition that pre-marital experiment is desirable to show whether the couple are sexually mated and well adapted to marriage with each other, is particularly a source of disaster for such reasons as the following:

During this period sexual relations are usually carried on under unsatisfactory conditions, in an unesthetic setting, with fear of discovery and need for haste. In these circumstances a relation that might otherwise be perfect is often found to be disappointing and leads the couple, wrongly, to the conclusion that they are "not meant for each other."

In the circumstances, one or the other of the partners is likely to be held by fears and taboos which prevent a successful adjustment. I have counseled several couples of this sort in which the man was impotent or the woman unable to give herself up to her lover because of vaginismus, in each instance due merely to unconscious fears and resistance. In these cases an immense amount of unhappiness was caused, and a permanent psychological tragedy narrowly averted. Of course, frigidity of the woman is an even more common experience. In all of these cases the relationship would probably not have encountered these difficulties, but would have proceeded smoothly and normally, if the couple had been married.

People who attempt to demonstrate their sexual adaptability by pre-marital experiments have usually been reading some of the modern textbooks on the technique of coitus and from this and from their incandescent imaginations have acquired a standard of perfection which many married people do not reach, or need to reach, even after a decade of sharing of experience. When the young people find that they do not from the outset attain the impossible ideal which they have imagined to represent the facts, they think they could not succeed in marriage and hence give up the project, with resulting disillusionment and feelings of inadequacy. Certainly a perfect sexual adjustment is the exception, rather than the rule, at the commencement of any marriage. If attained at all, it represents a normal

growth and development of two personalities sharing the same experience.

An argument now often heard insists that there is danger to subsequent sexual adjustment, in long and complete repression, and that gradually increased intimacy during betrothal is necessary, ending in complete sexual experience in order to avoid the evil effects of repression. Analysis is scarcely needed to reveal this argument as a peculiarly absurd rationalization. It is merely a case of shifting the critical point. If a long engagement with severe repression is harmful, then young people should not have such long engagements, but should marry and make their adjustments with the security, dignity, and self-respect that only marriage, under American social conditions provides.

That some couples begin their sexual experience during betrothal, without any subsequent damage, is no argument. The frequency of serious complications resulting from intercourse during betrothal is so great that no one should be encouraged to experiment in this way. After all, what is the gain? What legitimate advantage is secured, to offset the many and grave risks that are run?

In the light of actual experience (and the thousands of clients of the American Institute of Family Relations since 1930, offer a good many pertinent illustrations), it appears that the betrothal period may be regarded as important eugenically and psychologically, along

the lines laid down at the beginning of this paper. Attempts to turn it into a trial marriage are often not in good faith; but even when they are on the highest level, they do not provide satisfactory results and any supposed necessity can be avoided in most instances by earlier marriage, even under economic conditions that are not ideal.

Intercourse during betrothal presents serious physical risks, especially to the woman. It puts the mating on the defensive, as a furtive and often unesthetic experience, when it should have all the dignity, permanence, and security that public acknowledgment in marriage gives.

With these obvious disadvantages, what motives really lead young people to prejudice their marriages by intercourse during betrothal? I believe in many cases it will be found that the only strong motive is irresponsibility. Each one, and particularly the man, thinks that all the advantages of marriage can be had without paying the price in acceptance of responsibility.

If this is true, it is no argument in favor of turning the betrothal period into a common-law marriage. Civilization is suffering enough already from lack of any feeling of responsibility on the part of its members.

Betrothal has a real value. This value should not be lost by confused thinking, by ignorance, and a desire to get something for nothing.

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Table of Contents

A Summary of

ADVANTAGES OF IMMUNIZATION IN CHILDHOOD

Active Immunization carried out in early childhood achieves at least four beneficial results; namely—

(1) Individuals gain a very considerable protection from those communicable diseases against which they are actively immunized.

(2) The immunity, or resistance, obtained endures in most cases for prolonged periods, and may, in certain diseases, be reinforced by subsequent stimulation of immunity by a so-called "booster" dose, should exceptional exposure occur later.

(3) Diminished incidence of sequelae is the natural consequence wherever these diseases are prevented or their severity lessened.

(4) Widespread immunization tends to reduce the frequency of communicable disease in large population groups.

The Prevention of COMMUNICABLE DISEASES IN CHILDHOOD

SINCE the founding of *Lederle* in 1906 by Dr. Ernest J. Lederle, a brilliant public health authority, the organization has directed a large part of its efforts toward providing the medical profession with highly potent and exceptionally well-standardized biological products. During this period of four decades, we have steadily advanced our aim of building an organization of highly trained personnel, working in thoroughly equipped surroundings, competent to meet any problem in this field. The task is never finished, but it has progressed so satisfactorily that we feel our end-results compare favorably with any in the world.

The Prevention of DIPHTHERIA

The Advantages of Immunization with Diphtheria Toxoid

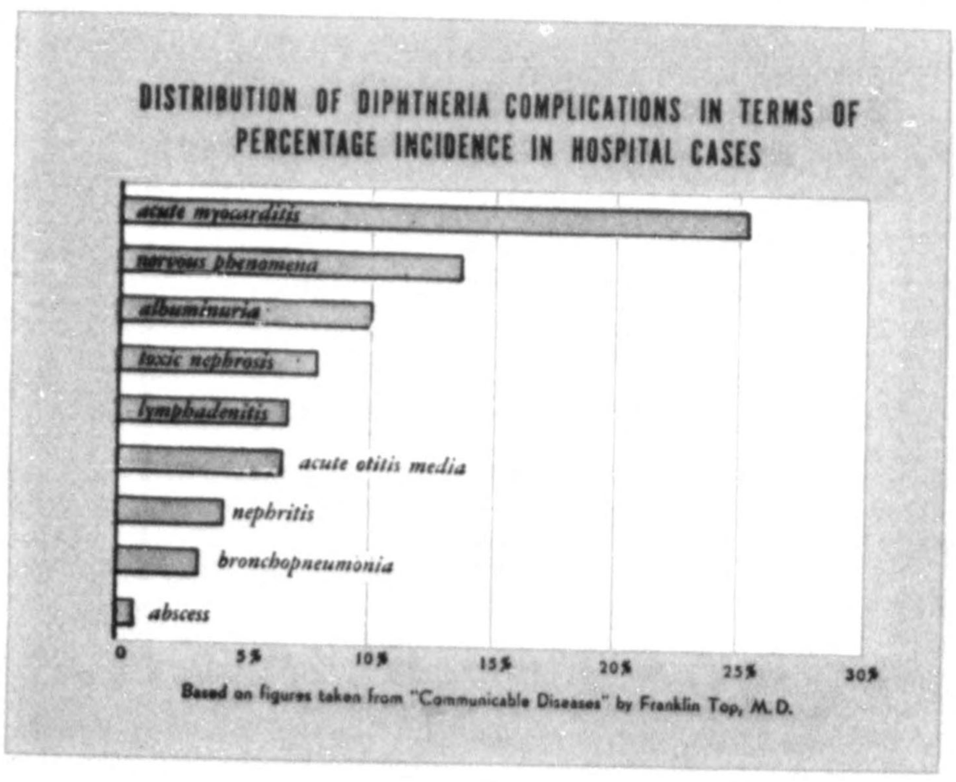
(1) A durable, active immunity is produced.

(2) The series of 3 (fluid toxoid) injections is completed in 8 weeks; or, if desired, the series of 2 (alum-precipitated toxoid) injections may be completed in 4 weeks.

(3) Alum-precipitated antigen is the preferred material, possessing greater antigenic potency, although local reactions may be more frequent and more severe than with the fluid toxoid.

(4) Immunization may be done about the eighth or ninth month of life without, as a rule, any preliminary "reactor test."

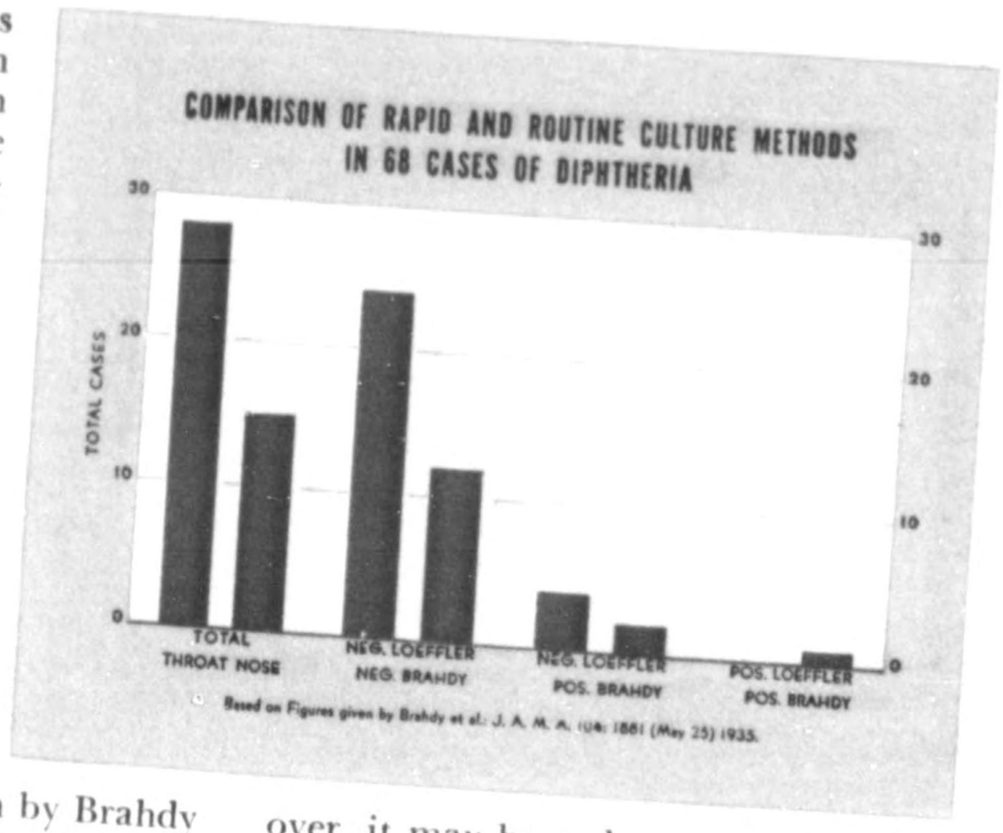
(5) A single injection at about 6 years of age, or on entrance into school, will provide a rapidly increasing immunity at a time of maximum exposure. This is known as a "booster" dose.



The Consequences of Diphtheria

A recent statistical analysis of about 10% of the population of the United States, over a period of 5 years, demonstrated that approximately 4% of all persons who develop diphtheria die therefrom.[1] In England, where immunization has been widely practiced, the death rate per 100,000 children un-

der 15 years of age has dropped from 38.5 in 1937 to 9.3 in 1944.[2] An estimate by Top[3] of the occurrence of complications and associated conditions following diphtheria, stated the incidence of complications to be: acute myocarditis, 25.3% albuminuria, 10.03%; nephritis, 4.37%; acute otitis media, 6.69%; nervous lesions, 13.58%.



The Rapid Diagnosis of Diphtheria

A major advance in the rapid diagnosis of diphtheria was the introduction by Brahdy of culture tubes consisting of sterile cotton swabs impregnated with unpreserved horse serum, coagulated on the tips of the swabs by means of heat. Swabs are used to take nose and throat cultures in the routine manner, whereupon they are returned to the tubes and incubated for 4 hours, the bacteria growing directly on the swab. The physician's vest pocket may serve as the incubator. At the end of the incubation period, smear preparations are made on slides directly from the swabs by rolling the swab with firm pressure over the slide. *Lederle* makes available the BRAHDY RAPID CULTURE OUTFIT for the diagnosis of diphtheria, ready for immediate use. Whenever the tubes are positive for diphtheria organisms, DIPHTHERIA ANTITOXIN (Globulin Modified) *Lederle* should be administered.

The Schick Test for Determining Individual Susceptibility to Diphtheria

The Schick test is a specific skin reaction designed to determine the susceptibility of an individual to diphtheria. Between infancy and 8 years of age, 70% of children may be Schick-positive. With increasing age, the percentage of such positive, or susceptible, individuals decreases among city-dwelling children until, in those 16 years or over, it may be as low as 15%. In immunizing children between 9 months[4] and 8 years of age, it is common practice to inject all children without first giving them a preliminary Schick test. If a Schick test is applied 8 weeks after a course of diphtheria toxoid has been completed, in more than 95% of cases a negative reaction will result.[5] The few who are Schick-positive after 8 weeks, will, in general, develop sufficient antitoxin to be Schick-negative at the end of about 6 months. To those in whom this does not occur, however, it may be advisable to give a "booster" dose of diphtheria toxoid.

The American Academy of Pediatrics[4] recommends that a Schick test be again done in children at the time of entering school (usually at 6 years of age) and again just prior to entering high school (usually at 12-14 years of age).

The Moloney Test of Hypersensitivity to Diphtheria Toxoid

Hayman[6] and Burke[7] have found that reactions from toxoid occur with moderate frequency in children over 5 years of age. In private practice occasions may arise where it is desirable to test for reactivity in children 5 years or even less of age. The general practice, however, is to inject children under 8 years of age with diphtheria toxoid

without making a preliminary "reactor test," since almost all children below this age have been found not to be dangerously hypersensitive to diphtheria toxoid. Persons over 8 years of age, however, should always receive the reactor test prior to the use of diphtheria toxoid. Hypersensitive individuals are thus detected by the intradermal injection of 0.1 cc. of DIPHTHERIA TOXOID FLUID diluted 1:20. If the test is positive, gradual immunization of the patient should be undertaken.

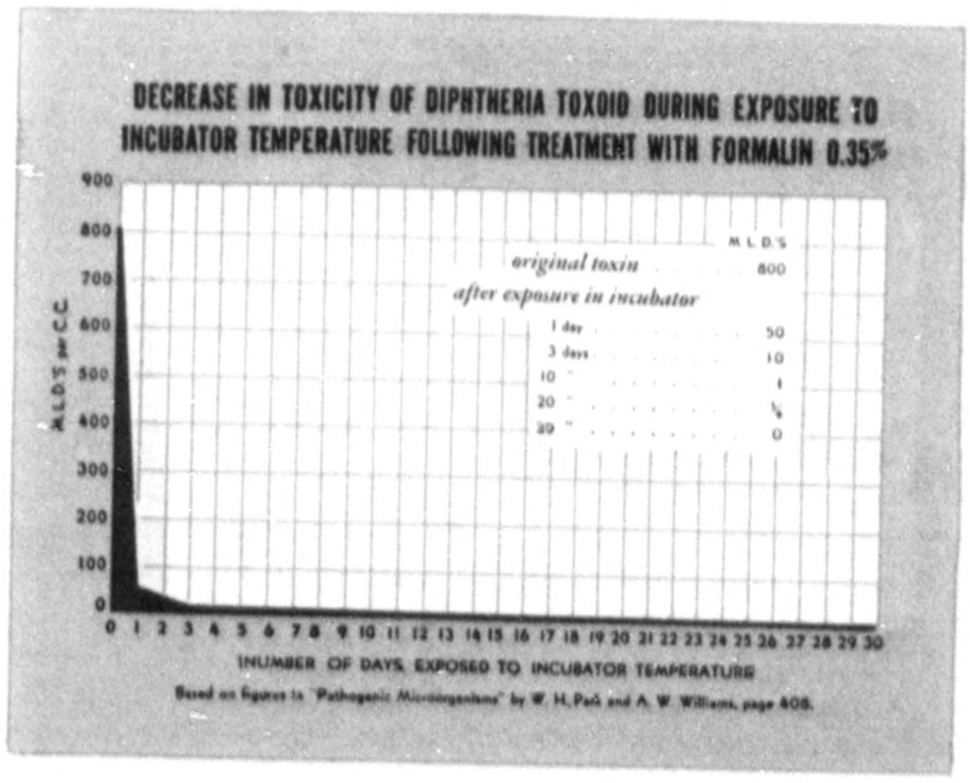
Active Immunization with Diphtheria Toxoid

Lederle makes diphtheria toxoid available in the fluid form as well as in the newer alum precipitated form. DIPHTHERIA TOXOID FLUID *Lederle* is injected subcutaneously in 3 doses of 1 cc. each, with an interval of 1 month between injections. DIPHTHERIA TOXOID (Refined Alum Precipitated) *Lederle* is administered in 2 doses of 1 cc. each, with an interval of 1 month between injections. A strong active immunity usually results, and tests for such immunity have been indicated above. At present there is also available a DIPHTHERIA-TETANUS TOXOID (*Alum Precipitated*) *Lederle* which can be used to establish immunity against two diseases with only two injections of 1 cc. each, administered intramuscularly or subcutaneously at a 2-months' interval. Should exposure to either disease occur before completion of immunization, appropriate antitoxin should be given for passive immunization.

The American Academy of Pediatrics[4] has suggested that it is preferable not to immunize prior to 9 months of age, but immunization is quite commonly practiced between 6 and 9 months of age.[8]

Passive Immunization Against Diphtheria with Antitoxin

In persons who have not been immunized by diphtheria toxoid, or who are Shick-positive, it may be necessary, whenever they are exposed to the disease, to administer 1000 units of DIPHTHERIA ANTITOXIN (Globulin-Modified) *Lederle*. The passive protection thus afforded is largely lost within 10 days. Therefore, the injection should be repeated if exposure to the disease persists longer than a few weeks. The usual precautions in employing serum should be observed prior to, during, and subsequent to the administration of diphtheria antitoxin. If it is decided to immunize actively patients who have received diphtheria antitoxin, the first immunizing dose of toxoid should not be given until 1 month after the last dose of antitoxin was administered.



The Prevention of SCARLET FEVER

The Advantages of Immunization with Scarlet Fever Streptococcus Toxin, Refined and Precipitated

Any individual who reacts positively to the Dick test is in serious danger of contracting scarlet fever. Avoidance of scarlet fever is highly desirable, since its sequelae are exceptionally hazardous. The following groups are most likely to benefit from active immunization:

(a) preschool children and those of grammar school age.

(b) adults who react positively to the Dick test and who are frequently in contact with the disease (physicians, nurses, hospital attendants).

(c) persons in communities, or institutional patients, where exposure to scarlet fever is likely to occur.

The Consequences of Scarlet Fever

Scarlet fever is among the most serious of the communicable diseases. The incidence of sequelae is exceptionally high and their gravity cannot be exaggerated, although the average mortality is low. Sulfadiazine and penicillin should be employed for the prevention and treatment of septic infections following scarlet fever, but the best protection is obviously prevention of the disease by active immunization.

Recently, 21,443 cases occurring over a 10-year period in a large city hospital[9] were reviewed, and the incidence of complications and associated conditions conservatively estimated as follows: acute otitis media, 18%; suppurative mastoiditis, 2.77%; albuminuria, 7.23%, nephritis, 1.49%; arthritis, 2.90%; acute myocarditis, 2.08%; abscess formation, 2.10%; pneumonia, 1.08%. The greatest danger lies in the fact that scarlet fever as a streptococcal disease may initiate rheumatic fever.[9]

Dick Test for Determining Susceptibility to Scarlet Fever

The Dick test is an extremely sensitive intradermal method for the measurement of resistance to clinically recognizable scarlet fever and is employed either to prove the development of immunity following active immunization with scarlet fever streptococcus toxin; or, to determine the susceptibility of individuals who have been, or may be, exposed to scarlet fever. (For detailed method of application, see package literature accompanying SCARLET FEVER STREPTOCOCCUS TOXIN FOR THE DICK TEST *Lederle*, or literature will be sent upon request).

The Dicks[10, 11] have stated that 20,956 persons with spontaneously nega-

tive reactions passed through one epidemic of scarlet fever, and some of these went through several epidemics, without contracting the disease. Newborn infants of immune mothers frequently exhibit a negative skin reaction which will become positive during the first year of life, but the newborn infant of a nonimmune mother will usually show a positive skin reaction.

Administration and Dosage of Immunizing Toxin

Preschool children, or children in the first grade, may receive the antigen without preliminary Dick testing. For children in grammar school between the first and final grades, preliminary Dick testing is desirable, and a course of immunization is recommended in those who are found to be Dick-positive.

Under ordinary circumstances it is neither necessary nor advisable to attempt the immunization of persons beyond the grammar school age, except where there is some special indication as in the case of student nurses, nurses constantly exposed to scarlet-fever patients, hospital attendants, physicians, inmates of institutions, and the like.[12]

Injection Method for SCARLET FEVER STREPTOCOCCUS TOXIN, REFINED AND PRECIPITATED, *Lederle*

For children of grammar school age or younger:

Three intracutaneous injections of 0.1 cc. each at two-week intervals as follows:

1st Dose — 750 Skin-Test Doses.
2nd Dose—3,000 Skin-Test Doses.
3rd Dose—10,000 Skin-Test Doses.

For older persons:

Four intracutaneous injections of 0.1 cc. each at two-week intervals as follows:

1st Dose—500 Skin-Test Doses.
2nd Dose—2,000 Skin-Test Doses.
3rd Dose—6,000 Skin-Test Doses.
4th Dose—10,000 Skin-Test Doses.

It is important that each dose be given in its respective order.

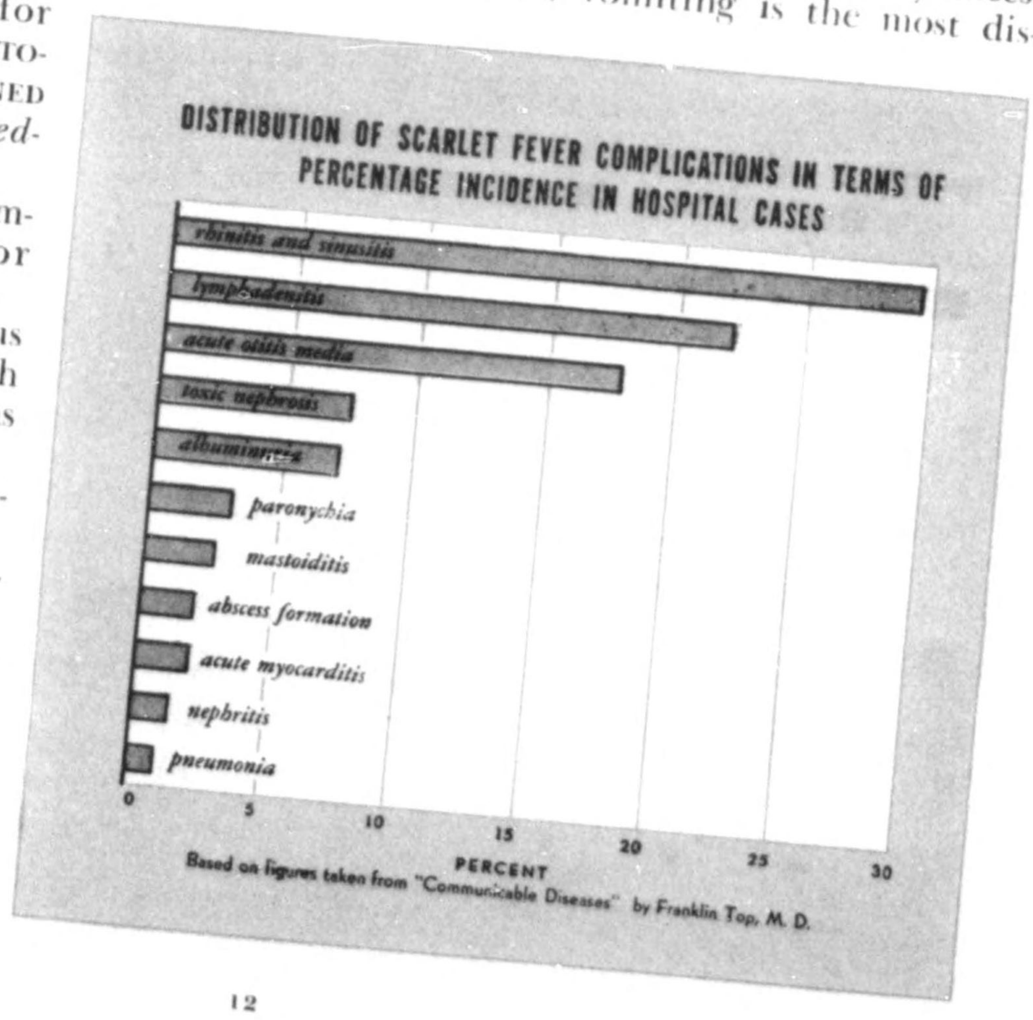
If desired, this four-dose method may be used for children as well.

Supplemental Immunization of Refractory Cases

Where individuals are retested, and the Dick test is found to be positive, or when added immunity is desired, a supplementary dose may be administered. It may be administered following the regular two-week interval or within one or two months of the completion of the prescribed three or four doses. This dose is identical for both.

Reactions

Since the immunizing antigen used in these injections is a free toxin, although in insoluble form, toxic reactions will follow the injection of too large a dose. The actual amount tolerated is an individual matter and cannot be predicted. With slightly excessive doses, vomiting is the most dis-



agreeable symptom encountered. However, in the doses recommended, the amount of toxin is sufficient to produce constitutional symptoms only in an occasional child. On rare occasions reactions of an allergic character may be encountered. These reactions, as observed to date, have been mild and did not require specific treatment,[13] though it is recommended that, following their occurrence, remaining doses be omitted or given with caution. Local reactions at the site of injection occur in almost all cases in varying degrees, and tenderness on palpation is usually present. A small nodule may form at the site of injection, which will be absorbed in two or three weeks.

While nonspecific reactions have been reduced by about 80% through the use of the improved medium, toxin reactions may still occur, and it is advisable to modify the dosage in highly susceptible individuals. If the skin reaction (Dick test) is 30 mm. in any diameter, it is best to begin with one-half the first dose and follow this later with the full first dose, proceeding from this point with the regular dosage. If the skin reaction is 40 mm. or more in any diameter and light in color, one-fourth of the first dose may be given and a week later a full first dose injected, continuing from this point with the regular dosage.

SCARLET FEVER TOXIN should never be used in the treatment of scarlet fever patients, nor should it be given to susceptibles who have been very recently exposed to the disease by contact, without first observing the patient for several days to be sure he is not in the early stages of scarlet fever.

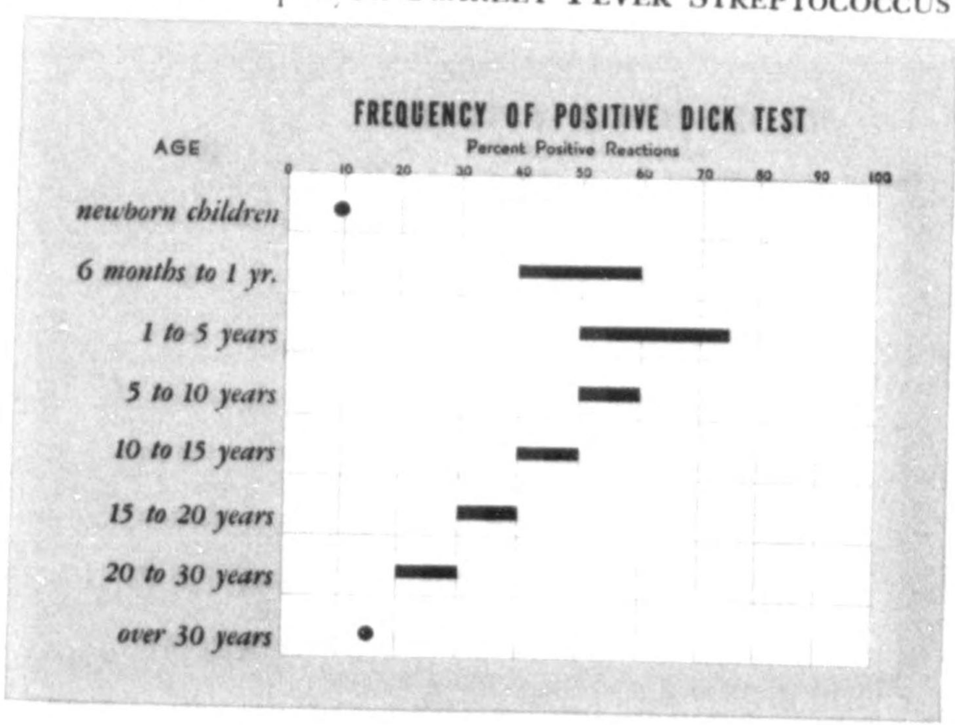
Check-up of Active Immunization

About 14 days after completion of the course of treatment, the Dick test should again be applied to determine the immunity response, one skin-test dose being injected intradermally into the right arm and 2 skin-test doses, in a single dose, into the left arm. A negative reaction to both 1 and 2 skin-test doses obtained from such a retest indicates the establishment of a lasting active immunity of sufficient degree to afford protection from the disease. Davey[14] has reported immunizing 2,421 school children. In a subsequent epidemic, only 6 of these developed scarlet fever (0.36%). Glazier[15] reports that none of his 340 immunized patients developed scarlet fever.

In community immunization programs, children need not be retested. However, where greater accuracy is desired, retesting may be done at the opening of the school year following the child's immunization, and adults may be retested whenever desirable to provide information as to the necessity for a supplementary dose. Melnick[16] states that it is logical to repeat the Dick test at intervals of one or two years if it is desired to be certain of an individual's immunity to scarlet fever.

Passive Immunization with Scarlet Fever Antitoxin

SCARLET FEVER STREPTOCOCCUS ANTITOXIN (Globulin Modified) *Lederle* has made practicable the use of this serum for attacks of even seemingly mild scarlet fever. Bradshaw[17] employed SCARLET FEVER STREPTOCOCCUS



ANTITOXIN (Globulin Modified) *Lederle* to immunize passively 658 cases at the Hospital for Sick Children, London, and states that secondary cases were practically abolished. In prophylactic doses, serum reactions occurred in less than 2% of cases. However, Toomey[18] has stated that there is not sufficient controlled evidence to demonstrate the value of passive protection for the prevention of scarlet fever. Sulfadiazine should be used with alkalis to prevent the septic complications of scarlet fever.

Modification of MEASLES

The Advantages of Measles Modification

The obtaining of a durable immunity to measles by the injection of prepared immune bodies is not as yet practicable; however almost the same result can be achieved by the modification of measles with IMMUNE GLOBULIN *Lederle*. The virulence of the infection is reduced without affecting the antigenicity of the virus. Thus a durable active immunity is produced, protecting the individual for many years, probably for life.

The practical advantages of IMMUNE GLOBULIN *Lederle* are:

1. Small dose—The dose (bulk) of Immune Globulin used by Bundesen, et al.[19] was about two-thirds that of convalescent serum. Where adult serum or whole blood has been used, the disparity in favor of Immune Globulin is greater.

2. Availability—Placentas are more easily obtained than convalescent or adult sera and the extract is more easily prepared and stored.

3. Uniform antibody content — Our experience indicates that the protective power in different pooled extracts, each prepared from about 5,000 placentas, is quite constant.

4. Equivalence of results—Available data indicate that results obtained with convalescent or adult serum are reproducible with the more convenient placental extract in equivalent dosage.

The Consequences of Measles

Immediate mortality from measles is extremely low.[1] The severity of complications among hospitalized cases is well known. Those who have studied the effects in later life of severe attacks of measles are one in the belief that much ill-health is attributable to this disease. Over 1% of cases develop broncholobar or influenzal pneumonia, and this leaves infants and young children susceptible to other infections for a period of weeks or months.

Partial Passive Immunization Against Measles

Among the first to report the use of placental immune antibodies for the modification and prevention of measles were Finkelstein[20] and McKhann and Chu.[21] It has been shown that the measles-protective antibodies are contained in the globulin-fraction extract and that the protective power of this extract is the same as that of an equivalent amount of blood from the mother. IMMUNE GLOBULIN HUMAN *Lederle* is obtained from placentas because this furnishes an ample and available source of supply. If administered to a person within 5 days after his first exposure to a known case of measles, it may avert an attack in a large percentage of instances, or at least modify the disease to such an extent that serious consequences will be exceptionally rare. The passive immunity persists for about 4 weeks. Following an attack of

modified measles, the patient acquires the usual lasting immunity to the disease.[8]

Administration and Dosage

One injection intramuscularly of 2 cc. of IMMUNE GLOBULIN HUMAN *Lederle,* if given 4 to 6 days after initial exposure to measles, will usually modify the attack in any child 2 years old or younger. For children between the ages of 2 and 7 years, it is believed that a dose of 3 cc. intramuscularly will usually be sufficient. In the case of children living in the same family, it is common practice to give the globulin from 2 to 4 days after the appearance of the rash in the exposing child. If the most favorable time for the administration has already passed, the desired result may still be obtained by increasing the dosage 25% for a delay of 1 or 2 days; or, 100% for a delay approaching the end of the incubation (10-12 days).

Interpretation of Results

Factors which bear upon the interpretation of results reported in the literature are:

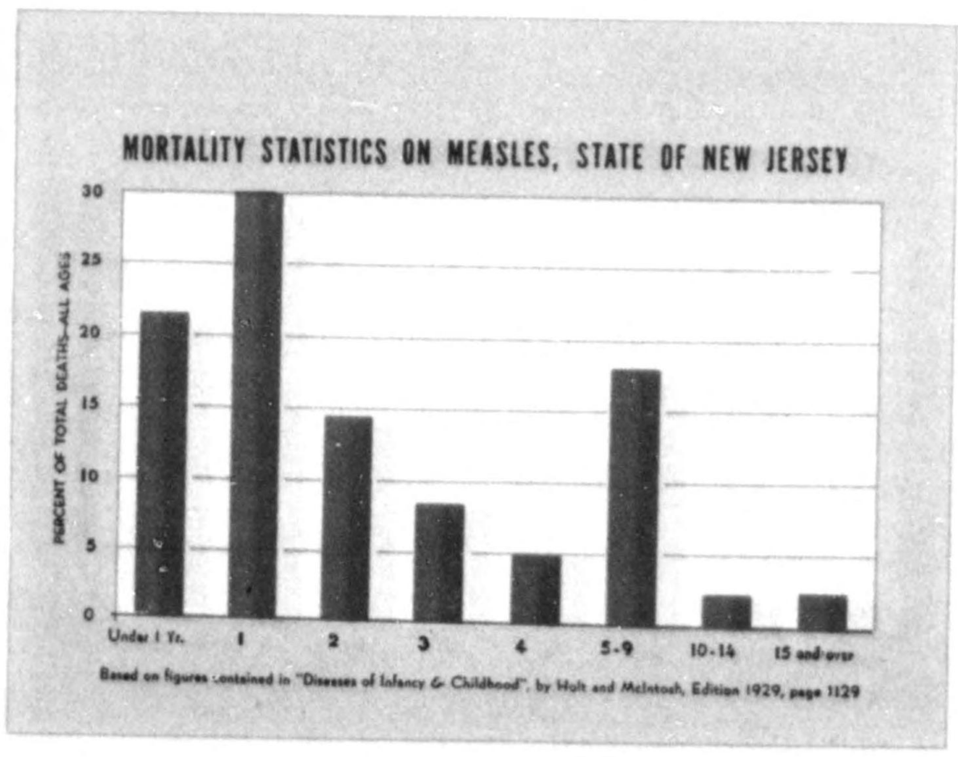
Presumption of exposure—This, in turn, may be modified by (a) intensity and (b) duration of exposure. Karelitz and Schick[22] have pointed out that hospital and institutional wards are usually unsuited for the study of measles prophylaxis because of the uncertainty of these factors. This point was later stressed by Levitas,[23] and Laning and Horan.[24]

Potency—The potencies of the preparations used by different investigators have varied widely, since the methods used in their production have differed, and no standard immune assay has been used.

Dosage—The doses used have varied widely. Bundesen, et al.[19] used doses smaller than those usually recommended, and said, "No doubt if larger amounts had been used soon after exposure, more instances of complete protection would have resulted."

Interval—The interval elapsing between exposure and administration of Immune Globulin has varied among the individuals in reported investigations. However, Bundesen, et al.[19] found the results varied but little when the globulin was given either before the fifth or sixth day following exposure, or after that interval. One of the reasons for this, however, is that the date of onset of a measles case occurring in the home often cannot be determined.

Physical condition of the individual—In this may be included all of the factors—known, as well as indeterminate—which operate to produce a severe or a mild attack of this disease when no specific treatment is given and where no known specific immunity is present.



The Prevention of SMALLPOX

The Consequences of Smallpox

The prevention of smallpox by vaccination is today an almost universal procedure. It has been responsible during the last quarter century for the elimination of this disease in many parts of the United States, as well as in other civilized countries. It is a "must" on the list of immunization procedures for every physician and public health officer, its indication being universal. An unfortunate complication of smallpox is facial disfigurement.

Indications for Smallpox Vaccination

The American Academy of Pediatrics[4] has stated: "Vaccination against smallpox should be done at any age during an epidemic, but routinely at any time between 3 to 12 months. Repeat at 6 and 12 years of age. Revaccinate whenever necessary."

Immunity develops to the point of protection at about the tenth day after vaccination in a primary vaccination, probably some days earlier in a secondary vaccination. (For precautions and contraindications see package literature.)

Vaccination Procedure

The multiple pressure method,[25] now recommended for general adoption, has the advantages of mildness and painlessness. It is more rapid than any other effectual and safe method; the implantation is very superficial; the epidermis is left nearly intact, and no control site is necessary for estimating the amount of trauma in an immune reaction. Moreover, the vaccine is wiped off immediately, so that the uselessness of a dressing is obvious. (For further technical details, see literature accompanying packages of vaccine.)

Care of Vaccinated Area

The vaccination site should not be exposed to direct sunlight for two hours.

Shields or other dressings are unnecessary and even harmful if permitted to remain on the arm. Should the vesicle be broken so that it is desirable to prevent soiling of the clothes, a thin fold of sterile gauze may be temporarily attached to the garment, not to the skin.Very rarely a severe "take" may require a few days of antiseptic dressings.

Reactions

When potent smallpox vaccine is properly applied, irrespective of the

method used, a reaction should appear promptly. This may be delayed several days, but it should not be necessary to wait the 14 days often mentioned in the literature.

Absence of any reaction indicates that the vaccine is incapable of protecting against smallpox, and not that the subject is immune. (See below for illustration.)