

OIL.—Continued.

- Oil marketing divorcement, hearings, 76th Cong., 1st sess., on H. R. 2318, to divorce businesses of production, refining, and transporting of petroleum products, May 24, June 2-28, 1939. 1939. 402 p. il. pl. map. (Judiciary Committee, House.) 50¢. Catalog No. Y 4.J 89/1: O1 5/4
- Oil refining employees. Studies on duration of disabling sickness: 3, Duration of disability from sickness and nonindustrial injuries among the male employees of an oil refining company with particular reference to the older worker, 1933-39, inclusive. 1942. 14 p. (Public Health Service, Reprint 2350 from Public Health Reports.) 5¢. Catalog No. FS 2.7/a: 2350
- Practices and methods of preventing and treating crude-oil emulsions. 1939. 106 p. il. (Mines Bureau, Bulletin 417.) 30¢. Catalog No. I 28.3: 417
- Production and development problems in Powell oil field, Navarro Co., Tex. 1928. (Mines Bureau, Bulletin 284.) 45¢. Catalog No. C 22.3: 284
- Properties of typical crude oils from fields of the Eastern Hemisphere. 1937. 169 p. il. (Mines Bureau, Bulletin 401.) 20¢. Catalog No. I 28.3: 401
- Salvage of material in the oil industry. 1929. (Mines Bureau, Technical Paper 461.) 20¢. Catalog No. C 22.5: 461
- Structure and oil and gas resources of Osage Reservation, Okla. 1922. 427 p. il maps, and portfolio of 32 maps. (Geological Survey, Bulletin 686.) \$1.75 the set. Catalog No. I 19.3: 686/1, 2
- Study of crude oil produced in the Salt Creek field, Wyoming. 1929. (Mines Bureau, Technical Paper 449.) 5¢. Catalog No. C 22.5: 449
- Survey of high-sulphur crude oils (black oils) produced in Wyoming. 1932. (Mines Bureau, Technical Paper 538.) 10¢. Catalog No. C 22.5: 538
- Tabulated analyses of Texas crude oils. 1939. 37 p. map. (Mines Bureau, Technical Paper 607.) 15¢. Catalog No. I 28.7: 607
- Venezuela, land of oil. [1944.] [16] p. il. (Coordinator of Inter-American Affairs Office.) 10¢. Catalog No. Pr 32.4602: V 55
- See also Coal, subhead Hydrogenation and liquefaction of coal, etc.; Paraffin; Petroleum; and Price list 64.
- OIL AND GAS FIRES.** Extinguishing and preventing oil and gas fires. 1918. (Mines Bureau, Bulletin 170.) 20¢. Catalog No. I 28.3: 170
- OIL BURNERS.** See Furnaces.
- OIL CONSERVATION.** See Oil, subhead Federal Oil Conservation Board, etc.
- OIL-CONTAMINATED WATER.** See Water pollution.
- OIL DERRICKS.**
- Safe practices at oil derricks. 1927. (Mines Bureau, Technical Paper 419.) 15¢. Catalog No. C 22.5: 419
- Safeguarding workmen at oil derricks. 1927. (Mines Bureau, Bulletin 272.) 40¢. Catalog No. C 22.3: 272
- OIL-FIELD WATERS.** System of analysis for oil-field waters. 1928. 14 p. (Mines Bureau, Technical Paper 432.) 5¢. Catalog No. C 22.5: 432
- OIL LANDS.** Oil Land Leasing Act of 1920, with amendments and other laws relating to mineral lands [Feb. 25, 1920-Dec. 23, 1944.] 1945. 257 p. (House of Representatives.) 30¢. Catalog No. Y 1.2: O1 5/945
- OIL ROYALTIES.** Tables for computing oil royalties under Leasing Act of Feb. 25, 1920, as amended by act of August 21, 1935. 1941. 28 p. (Geological Survey.) 10¢. Catalog No. I 19.2: O1 5
- OIL SHALE.**
- Coking of oil shales. 1926. (Mines Bureau, Technical Paper 398.) 5¢. Catalog No. C 22.5: 398
- Studies of certain properties of oil shale and shale oil. 1938. 159 p. il. chart. (Mines Bureau, Bulletin 415.) 25¢. Catalog No. I 28.3: 415
- Uses of water in oil-shale industry with particular reference to engineering requirements, with a chapter on Sanitation of oil-shale camps. 1923. (Mines Bureau, Technical Paper 324.) 10¢. Catalog No. I 28.7: 324

Order publications by catalog number and title

OIL WELLS.

- Decline and ultimate production of oil wells, with notes on valuation of oil properties. 1919. (Mines Bureau, Bulletin 177.) 30¢.
Catalog No. I 28.3: 177
- Effect of vacuum on oil wells. 1930. (Mines Bureau, Bulletin 322.) 35¢.
Catalog No. C 22.3: 322
- Gas-lift method of flowing oil wells. 1930. 118 p. il. pl. (Mines Bureau, Bulletin 323.) 30¢.
Catalog No. C 22.3: 323
- Mechanical equipment used in the drilling and production of oil and gas wells in the Oklahoma City field. 1934. 89 p. il. (Mines Bureau, Technical Paper 561.) 10¢.
Catalog No. I 28.7: 561
- Perforated casing and screen pipe in oil wells. 1920. (Mines Bureau, Technical Paper 247.) 20¢.
Catalog No. I 28.7: 247
- Surface machinery and methods for oil-well pumping. 1925. (Mines Bureau, Bulletin 224.) 50¢.
Catalog No. I 28.3: 224

OKLAHOMA. *See* Accidents; Coal.

OLIVINE. *See* Nonmetals.

OREGON. *See* Electrolytic manganese pilot plant; Gold.

ORES.

- Concentration experiments with the siliceous red hematite of the Birmingham district, Ala. 1917. (Mines Bureau, Bulletin 110.) 15¢.
Catalog No. I 28.3: 110
- Development, mining, and handling of ore in folded and faulted areas, red iron ore mines, Birmingham district, Ala. 1927. (Mines Bureau, Technical Paper 407.) 15¢.
Catalog No. C 22.5: 407
- 2, Factors governing entry of solutions into ores during leaching. 1931. (Mines Bureau, Technical Paper 498.) 10¢.
Catalog No. C 22.5: 498
This is a continuation of Mines Technical Paper 441, which is now exhausted.
- Roasting of lead-carbonate ores preliminary to gravity concentration. 1929. (Mines Bureau, Technical Paper 413.) 10¢.
Catalog No. C 22.5: 413
- See also* Blast furnaces; Coal; Copper; Iron; Molybdenite; Slimes.

ORSAT APPARATUS. *See* Gases.

OXYGEN. *See* Coal; Explosives; Rescue work.

PACKAGED FUEL. *See* Briquets.

PARAFFIN.

- Manufacture of paraffin wax from petroleum. 1935. 113 p. il. (Mines Bureau, Bulletin 388.) 15¢.
Catalog No. I 28.3: 388
- Methods of dealing with paraffin troubles encountered in producing crude oil. 1928. (Mines Bureau, Technical Paper 414.) 15¢.
Catalog No. C 22.5: 414

PEAT.

- Comparative moisture-absorbing and moisture-retaining capacities of peat and soil mixtures. 1936. 26 p. il. (Agriculture Dept., Technical Bulletin 532.) 5¢.
Catalog No. A 1.36: 532
- Grades of peat and muck for soil improvement. 1933. 31 p. il. (Agriculture Dept., Circular 290.) 5¢.
Catalog No. A 1.4/2: 290
- Moss peat, its uses and distribution in United States. 1931. 12 p. il. (Agriculture Dept., Circular 167.) 5¢.
Catalog No. A 1.4/2: 167
- Peat in:
1939. [From Minerals Yearbook, 1940, review of 1939.] 5¢.
Catalog No. I 28.37/a: P 329/940
1940. [From Minerals Yearbook, review of 1940.] 5¢.
Catalog No. I 28.37/a: P 329/940-2

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PEAT—Continued.

Peat in—Continued.

1941. [From Minerals Yearbook 1941.] 5¢.

Catalog No. I 28.37/a: P 329/941

1944. [From Minerals Yearbook 1944.] 5¢. Catalog No. I 28.37/a: P 329/944

1945. [From Minerals Yearbook 1945.] 5¢. Catalog No. I 28.37/a: P 329/945

Peat resources in Alaska. 1941. 84 p. il. (Agriculture Dept., Technical Bulletin 769.) 15¢. Catalog No. A 1.36: 769

PENNSYLVANIA. See Coal; Mine roofs.

PENNSYLVANIA ANTHRACITE. See Anthracite; Coal burners.

PETROLEUM.

Allocation of tariff quota on crude petroleum and fuel oil, proclamation by President, issued Dec. 12, 1939, pursuant to Article 7 of reciprocal trade agreement between United States and Venezuela signed Nov. 6, 1939. 1941. 5 p. (State Dept., Executive Agreement Series 191.) 5¢. Catalog No. S 9.8: 191

Allocation of tariff quota on crude petroleum and fuel oil, proclamation by President, issued Dec. 28, 1940, pursuant to Article 7 of reciprocal trade agreement between United States and Venezuela signed Nov. 6, 1939. 1941. 5 p. (State Dept., Executive Agreement Series 192.) 5¢

Catalog No. S 9.8: 192

American petroleum interests in foreign countries, hearings, 79th Cong., 1st sess., pursuant to S. Res. 36 (extending S. Res. 253, 78th Congress), providing for investigation with respect to petroleum resources in relation to national welfare, June 27 and 28, 1945. 1946. 462 p. il. pl. maps. (Special Committee Investigating Petroleum Resources, Senate.) \$1.00.

Catalog No. Y 4.P 44: P 44/3

Collecting and examining subsurface samples of petroleum. 1941. 68 p. il. pl. (Mines Bureau, Technical Paper 629.) 20¢. Catalog No. I 28.7: 629

Crude petroleum and petroleum products in:

1939. [From Minerals Yearbook 1940, review of 1939.] 15¢

Catalog No. I 28.37/a: P 448/3/940

1940. [From Minerals Yearbook, review of 1940.] 15¢.

Catalog No. I 28.37/a: P 448/3/940-2

1941 [From Minerals Yearbook 1941.] 15¢.

Catalog No. I 28.37/a: P 448/3/941

1944. [From Minerals Yearbook 1944.] 20¢.

Catalog No. I 28.37/a: P 448/3/944

These reports include final statistics for the preceding year.

Detection of small quantities of petroleum vapor with Burrell methane indicator. 1924. (Mines Bureau, Technical Paper 352.) 5¢.

Catalog No. I 28.7: 352

Earnings in southwestern petroleum industry, Apr. 1943. 1944. 29 p. il. (Labor Statistics Bureau, Bulletin 762.) 10¢. Catalog No. L 2.3: 762

Expropriation of petroleum properties, agreement between United States and Mexico, effected by exchange of notes signed Nov. 19, 1941. 1942. 7 p. (State Dept., Executive Agreement Series 234.) 5¢. Catalog No. S 9.8: 234

Farmers retail petroleum associations. 1939. 20 p. il. (Farm Credit Administration, Circular C-113.) 5¢. Catalog No. FCA 1.4/3: C-113

Final report of the Marketing Division, Petroleum Administrative Board. 1936. 190 p. (Petroleum Administrative Board.) 15¢.

Catalog No. I 32.2: M 34

Independent petroleum company, hearings, 79th Cong., 2d sess., pursuant to S. Res. 36 (extending S. Res. 253, 78th Congress), resolution providing for investigation with respect to petroleum resources in relation to national welfare, Mar. 19-22, 27, and 28, 1946. 1946. 569 p. pl. (Special Committee Investigating Petroleum Resources, Senate.) \$1.00.

Catalog No. Y 4.P 44: P 44/5

Order publications by catalog number and title

PETROLEUM—Continued.

Influence of petroleum technology upon composite interest in oil. [From Minerals Yearbook, 1935.] 5¢. Catalog No. I 28.37/a: P 448/4/935

Investigation of concentration of economic power, study made for Temporary National Economic Committee, 76th Cong., 3d sess., pursuant to Public res. 113 (75th Congress), authorizing and directing select committee to make full and complete study and investigation with respect to concentration of economic power in, and financial control over, production and distribution of goods and services: Monograph 39, Control of petroleum industry by major oil companies. 1941. 101 p. il. (Temporary National Economic Committee.) 30¢. Catalog No. Y 4.T 24: M 75/no.39

— Same: Monograph 39-A, Review and criticism on behalf of Standard Oil Co. (New Jersey) and Sun Oil Co. of Monograph no. 39, with rejoinder by monograph author. 1941. 96 p. (Temporary National Economic Committee.) 15¢. Catalog No. Y 4.T 24: M 75/no. 39-A

Investigation of national defense program, additional report pursuant to S. Res. 71 (77th Congress), and S. Res. 6 (78th Congress), authorizing and directing investigation of national defense program: pt. 15, Report of subcommittee concerning investigations overseas, sec. 1, petroleum matters. 1944. 80 p. (78th Cong., 2d sess., S. rp. 10, pt. 15.) 15¢. Catalog No. 78-2: S. rp. 10/pt.15
This publication reads 78th Congress 2d session, although Senate report 10 is a report of the 1st session of the 78th Congress.

Investigation of national defense program; additional report pursuant to S. Res. 71 (77th Congress), authorizing and directing investigation of national defense program: pt. 1, Interim report on barges. 1943. 16 p. (78th Cong., 1st sess., S. rp. 10, pt. 1.) 5¢. Catalog No. 78-1: S. rp. 10/pt.1
Discusses the transportation of petroleum and petroleum products.

Investigation of petroleum resources, hearings 79th Cong., 1st sess., pursuant to S. Res. 36 (extending S. Res. 253, 78th Congress), June 19-25, 1945. 1946. 539 p. il. (Special Committee Investigating Petroleum Resources, Senate.) 75¢. Catalog No. Y 4.P 44: P 44
Relates to new sources of petroleum in United States.

Investigation of toxic gases from Mexican and other high-sulphur petroleum and products. 1925. (Mines Bureau, Bulletin 231.) 30¢. Catalog No. I 28.3: 231

National standard petroleum oil tables. Issued Mar. 4, 1936. 1936. 175 p. (National Bureau of Standards, Circular 410.) 20¢. Catalog No. C 13.4: 410
Supersedes Standards Circular 154.

Abridged volume correction table for petroleum oils; approved by American Petroleum Institute, American Society for Testing Materials, Bureau of Mines, and National Bureau of Standards. Issued Apr. 20, 1937. 8 p. (National Bureau of Standards, Circular 410, supplement.) 5¢. Catalog No. C 13.4: 410/supp.
Supersedes supplements to Standards Circular 154.

Oil and Gas Division of Department of Interior, hearing, 79th Cong., 2d sess., pursuant to S. Res. 36 (extending S. Res. 253, 78th Congress), resolution providing for investigation with respect to petroleum resources in relation to the national welfare, June 17, 1946. 1946. 25 p. (Special Committee Investigating Petroleum Resources, Senate.) 10¢. Catalog No. Y 4.P 44: OI 5

Operation of new pool plans of orderly development under code of fair competition for the petroleum industry. 1936. 87 p. (Petroleum Administrative Board.) 10¢. Catalog No. I 32.2: P 78

Payment for expropriated petroleum properties, agreement between United States of America and Mexico, effected by exchange of notes, signed at Washington, Sept. 25 and 29, 1943; and joint report. 1945. 9 p. (State Dept., Executive Agreement Series 419.) 5¢. Catalog No. S 9.8: 419
English and Spanish.

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PETROLEUM—Continued.

Petroleum investigation, hearing, 76th Congress, on H. R. 290 and H. R. 7372, to promote conservation of petroleum, to provide for cooperation with States in preventing waste of petroleum, to create Office of Petroleum Conservation, to amend act of Feb. 22, 1935, as amended: (Interstate and Foreign Commerce Committee, House.) Catalog No. Y 4.In 8/4: P 44/7

Pt. 1, *exhausted*.

Pt. 2, *exhausted*.

Pt. 3, Feb. 6-9, 1940, at Washington, D. C. 1940. p. 931-1427. 60¢.

Pt. 4, Feb. 19-27, 1940, at Washington, D. C. 1940. p. 1429-2170. 75¢.

Pt. 5, June 20, 1940. 1940. p. 2171-2329. 20¢.

NOTE.—H. R. 7372 transfers functions of Petroleum Conservation Division of Interior Department to Petroleum Conservation Office, and also establishes Council on Petroleum Conservation.

Petroleum pipe lines (interstate). Hearings, 77th Cong., 1st sess., on H. R. 4816, act to facilitate construction, extension, or completion of interstate petroleum pipe lines related to national defense, and to promote interstate commerce, June 23 and 27, 1941. 1941. 99 p. (Interstate Commerce Committee, Senate.) 15¢. Catalog No. Y 4.In 8/3: P 66

Petroleum requirements, postwar, hearings, 79th Cong., 1st sess., pursuant to S. Res. 36 (extending S. Res. 253, 78th Congress), providing for investigation with respect to petroleum resources in relation to national welfare, Oct. 3 and 4, 1945. 1946. 119 p. il. pl. map. (Special Committee Investigating Petroleum Resources, Senate.) 25¢. Catalog No. Y 4.P 44: P 44/2

Petroleum statistics, 1935-38. 1940. 61 p. (Mines Bureau, Economic Paper 20.) 10¢. Catalog No. I 28.38: 20

Photomicroscopy of salt in petroleum. 1942. 56 p. il. (Mines Bureau, Technical Paper 638.) 25¢. Catalog No. I 28.7: 638

Preliminary report on survey of crude petroleum, cost of production for years 1931-1933, and comparison with years, 1927-1930. 1934. 74 p. (Petroleum Administrative Board.) 10¢. Catalog No. I 32.2: C 82

Refining of light petroleum distillates. 1930. (Mines Bureau, Bulletin 333.) 25¢. Catalog No. C 22.3: 333

Regulations 49 relating to producers' tax on crude petroleum, tax on refining of crude petroleum, and tax on gasoline produced or recovered from natural gas under revenue act of 1934. 1934. 40 p. (Internal Revenue Bureau, Regulations 49.) 5¢. Catalog No. T 22.17: 49/4

Report on cost of producing crude petroleum, information with reference to approximate average cost of crude petroleum at wells, and estimated recoverable reserves in United States. 1935. 137 p. pl. (Petroleum Administrative Board.) 15¢. Catalog No. I 32.2: C 82/2

The report, in conjunction with previous studies, extends over an 8-year period, 1927-34.

Safety at petroleum cracking plants. 1933. (Mines Bureau, Technical Paper 551.) 10¢. Catalog No. C 22.5: 551

16th census of United States, 1940, census of business, wholesale trade, 1939: Petroleum distribution, bulk stations and distributing terminals. 1941. 63 p. (Census Bureau.) 15¢. Catalog No. C 3.940-26: P 44

Union agreements in the petroleum-refining industry in effect in 1944. 1945. 19 p. (Labor Statistics Bureau, Bulletin 823.) 10¢. Catalog No. L 2.3: 823

Wages in petroleum drilling and production in the Southwest, Apr. 1944. [1945.] 14 p. (Labor Statistics Bureau, Bulletin 810.) 5¢. Catalog No. L 2.3: 810

War emergency pipe-line systems and other petroleum facilities, hearings before Special Committee Investigating Petroleum Resources and surplus property subcommittee of Committee on Military Affairs, Senate, 79th Cong., 1st sess., Nov. 15-17, 1945. 1945. 431 p. il. maps. (Special Committee Investigating Petroleum Resources, Senate.) \$1.00. Catalog No. Y 4.P 44: P 66

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PETROLEUM—Continued.

Wartime petroleum policy under Petroleum Administration for War, hearings, 79th Cong., 1st sess., pursuant to S. Res. 36 (extending S. Res. 253, 78th Congress), resolution providing for investigation with respect to petroleum resources in relation to the national welfare, Nov. 28-30, 1945. 1946. 280 p. pl. (Special Committee Investigating Petroleum Resources, Senate.) \$1.25.
Catalog No. Y 4.P 44: P 44/4

See also Accidents; Mining engineering; Paraffin; and Price lists 62 and 64.

PETROLEUM LABOR POLICY BOARD. Decisions of Petroleum Labor Policy Board, Feb. 6, 1934, to Mar. 13, 1935. 1935. 95 p. (Interior Dept.) 10¢.
Catalog No. I 32.9: D 35

PHOSPHATE ROCK. *See* Phosphates.

PHOSPHATES.

Joint resolution [S. J. Res. 298] to create Joint Congressional Committee to Investigate Adequacy and Use of Phosphate Resources of United States. Approved June 16, 1938. (75th Cong., Public Resolution 112.) 5¢.
Catalog No. S 7.5/2: 75/112

Phosphate resources of United States; report transmitted pursuant to Public Res. 112, 75th Congress, and Public Res. 68, 76th Congress, to create Joint Congressional Committee to Investigate Adequacy and Use of Phosphate Resources of United States 1941. 3 p. (77th Cong., 1st sess., S. doc. 5.) 5¢.
Catalog No. 77-1: S.doc.5

Phosphate rock in:

1939. [From Minerals Yearbook 1940, review of 1939.] 5¢.
Catalog No. I 28.37/a: P 566/940
1940. [From Minerals Yearbook, review of 1940.] 5¢.
Catalog No. I 28.37/a: P 566/940-2
1941. [From Minerals Yearbook 1941.] 5¢. Catalog No. I 28.37/a: P 566/941
1944. [From Minerals Yearbook 1944.] 10¢.
Catalog No. I 28.37/a: P 566/944
1945. [From Minerals Yearbook 1945.] 10¢.
Catalog No. I 28.37/a: P 566/945

See also Arsenic.

PIG IRON. *See* Iron.

PILOT-PLANT OPERATIONS. *See* Electrolytic manganese pilot plant.

PINITE. *See* Nonmetals.

PLATINUM and allied metals in:

1939. [From Minerals Yearbook, 1940, review of 1939.] 5¢.
Catalog No. I 28.37/a: P 696/940
1940. [From Minerals Yearbook, review of 1940.] 5¢.
Catalog No. I 28.37/a: P 696/940-2
1941. [From Minerals Yearbook 1941.] 5¢.
Catalog No. I 28.37/a: P 696/941
1944. [From Minerals Yearbook, 1944.] 5¢.
Catalog No. I 28.37/a: P 696/944
1945. [From Minerals Yearbook 1945.] 5¢.
Catalog No. I 28.37/a: P 696/945

POISONOUS GASES. *See* Gases.

POLYHALITE DEPOSITS. *See* Potash.

POTASH.**Potash in:**

1940. [From Minerals Yearbook, review of 1940.] 5¢.
Catalog No. I 28.37/a: P 847/940-2
1941. [From Minerals Yearbook, 1941.] 5¢.
Catalog No. I 28.37/a: P 847/941
1944. [From Minerals Yearbook 1944.] 5¢.
Catalog No. I 28.37/a: P 847/944
1945. [From Minerals Yearbook 1945.] 10¢.
Catalog No. I 28.37/a: P 847/945

Potash mining in Germany and France. 1927. (Mines Bureau, Bulletin 274.) 25¢.
Catalog No. C 22.3: 274

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POTASH—Continued.

Potash salts from Texas-New Mexico polyhalite deposits, commercial possibilities, proposed technology, and pertinent salt-solution equilibria. 1944. 251 p. il. (Mines Bureau, Bulletin 459.) 35¢. Catalog No. I 28.3: 459

Tests of the compressibility and bearing strength of potash salt. 1937. 32 p. il. (Mines Bureau, Technical Paper 575.) 10¢. Catalog No. I 28.7: 575

POTTERY WORKERS.

Silicosis and lead poisoning among pottery workers. 1939. 178 p. il. (Public Health Service, Bulletin 244.) 20¢. Catalog No. T 27.12: 244

Silicosis and lead poisoning among pottery workers, summary of report of study made in West Virginia. 1939. 4 p. (Public Health Service, Reprint 2057.) 5¢. Catalog No. T 27.6/a: 2057

PROSPECTING FOR MINERALIZATION, ETC. See Minerals.**PYRITES. See Sulfur, etc.****QUARRIES. See Accidents; Shot-firing.****QUARTZ CRYSTALS. See Nonmetals.**

QUICKSILVER. 1931. 168 p. il. pl. (Mines Bureau, Bulletin 335.) 45¢. Catalog No. C 22.3: 335

RESCUE WORK.

Central mine rescue stations. 1939. 55 p. il. (Mines Bureau, Miners' Circular 39.) 10¢. Catalog No. I 28.6: 39

Rescue and recovery operations in mines after fires and explosions. 1916. 109 p. (Mines Bureau.) Buckram, 25¢. Catalog No. I 28.2: R 31/1

Self-contained oxygen breathing apparatus, handbook for miners. Rev. 1941. 234 p. il. pl. (Mines Bureau.) 45¢. Catalog No. I 28.16: B 74/941

See also First aid; Self-rescuer.

RESPIRATORS. See Gas masks; Supplied-air respirators.

RESUSCITATION. Report of Committee on Resuscitation from Mine Gases. 1914. (Mines Bureau, Technical Paper 77.) 5¢. Catalog No. I 28.7: 77

ROCK-DUST BARRIERS. Test of rock-dust barriers in experimental mine. 1932. (Mines Bureau, Bulletin 353.) 10¢. Catalog No. C 22.3: 353

ROOF SUPPORTS. Tests of strength of roof supports used in anthracite mines of Pennsylvania, report of Bureau of Mines to Pennsylvania State Anthracite Mine Cave Commission, and review of compressive strength of anthracite, bituminous coals, and mine supports. 1929. (Mines Bureau, Bulletin 303.) 15¢. Catalog No. C 22.3: 303

ROLLING MILLS. See Blast furnaces.**RUBY MICA. See Mica.****SAFETY AND HEALTH CONDITIONS IN MINES.**

Coal miners' safety manual, handbook for miners. [Reprint] 1943. 218 p. il. (Mines Bureau.) 25¢. Catalog No. I 28.16: C 63/3-2

Health and working environment of nonferrous metal mine workers. 1942. 110 p. il. pl. (Public Health Service, Bulletin 277.) 20¢. Catalog No. FS 2.3: 277

Joseph A. Holmes Safety Association and its awards. 1940. 121 p. pl. (Mines Bureau, Bulletin 421.) 20¢. Catalog No. I 28.3: 421

Safety education in schools of mining districts. 1938. 34 p. il. (Mines Bureau, Miners' Circular 37.) 10¢. Catalog No. I 28.6: 37

Some essential safety factors in tunneling. 1941. 61 p. il. (Mines Bureau, Bulletin 439.) 15¢. Catalog No. I 28.3: 439

Some haulage safety devices for use on grades, slopes, and inclined shafts. 1942. 44 p. il. (Mines Bureau, Miners' Circular 43.) 10¢. Catalog No. I 28.6: 43

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SAFETY AND HEALTH CONDITION IN MINES—Continued.

See also Coal mines; Copper mines; Electric apparatus; Explosions and explosives; Iron mines; Lamps (miners).

SALT in:

1939. [From Minerals Yearbook, 1940, review of 1939.] 5¢.
Catalog No. I 28.37/a : Sa 37/940
1940. [From Minerals Yearbook, review of 1940.] 5¢.
Catalog No. I 28.37/a : Sa 37/940-2
Report covers evaporated salt, rock salt, and salt in brine.
1941. [From Minerals Yearbook 1941.] 5¢.
Catalog No. I 28.37/a : Sa 37/941
1944. [From Minerals Yearbook 1944.] 5¢.
Catalog No. I 28.37/a : Sa 37/944
1945. [From Minerals Yearbook 1945.] 10¢.
Catalog No. I 28.37/a : Sa 37/945

See also Petroleum.

SAMPLING. *See* Coal.

SAND AND GRAVEL in:

1939. [From Minerals Yearbook 1940, review of 1939.] 5¢.
Catalog No. I 28.37/a : Sa 56/940
1940. [From Minerals Yearbook, review of 1940.] 5¢.
Catalog No. I 28.37/a : Sa 56/940-2
1941. [From Minerals Yearbook 1941.] 5¢.
Catalog No. I 28.37/a : Sa 56/941
1942. [From Minerals Yearbook 1942.] 10¢.
Catalog No. I 28.37/a : Sa 56/942
1943. [From Minerals Yearbook 1943.] 10¢.
Catalog No. I 28.37/a : Sa 56/943
1944. [From Minerals Yearbook 1944.] 10¢.
Catalog No. I 28.37/a : Sa 56/944
1945. [From Minerals Yearbook 1945.] 10¢.
Catalog No. I 28.37/a : Sa 56/945

SANITATION.

- Oil-camp sanitation. 1921. (Mines Bureau, Technical Paper 261.) 10¢.
Catalog No. I 28.7 : 261
- Sanitation in mines. 1924. (Mines Bureau, Miners' Circular 28.) 5¢.
Catalog No. I 28.6 : 28

See also Oil shale.

SCRAP STEEL AND IRON. *See* Iron.

SECONDARY METALS. *See* Metals.

SELENIUM. *See* Metals; and Price list 46.

SELF-RESCUER. Use of miners' self-rescuer. 1928. (Mines Bureau, Miners' Circular 30.) 10¢.
Catalog No. C 22.6 : 30

SERPENTINE. *See* Nonmetals.

SHALE OIL. *See* Oil shale.

SHOT-FIRING.

- Electric shot-firing in mines, quarries, and tunnels. 1926. (Mines Bureau, Bulletin 240.) 35¢.
Catalog No. C 22.3 : 240
- How leakage of current from electric shot-firing circuit causes misfires, 1930. (Mines Bureau, Technical Paper 471.) 5¢.
Catalog No. C 22.5 : 471

SILICOSIS. *See* Miner's health and diseases; Pottery workers.

SILVER.

- Economic relations of silver to other metals in argentiferous ores. 1930. (Mines Bureau, Economic Paper 10.) 10¢.
Catalog No. C 22.13 : 10
- Silver, copper, lead, and zinc in Central States in 1945. [From Minerals Yearbook 1945.] 10¢.
Catalog No. I 28.37/a : Si 39/945
- Silver, its properties and industrial uses. 1936. 72 p. il. (National Bureau of Standards, Circular 412.) 10¢.
Catalog No. C 13.4 : 412
- See also* Gold; Manganese; and Price lists 15, 28, and 64.

MINES

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SLATE.

Slate in:

1940. [From Minerals Yearbook, review of 1940.] 5¢.
Catalog No. I 28.37/a: SI 14/940-2
1941. [From Minerals Yearbook 1941.] 5¢.
Catalog No. I 28.37/a: SI 14/941
1942. [From Minerals Yearbook 1942.] 5¢. Catalog No. I 28.37/a: SI 14/942
1943. [From Minerals Yearbook 1943.] 5¢.
Catalog No. I 28.37/a: SI 14/943
1944. [From Mineral Yearbook 1944.] 5¢. Catalog No. I 28.37/a: SI 14/944
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Public Health Reports

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IMMUNIZATION WITH INACTIVE VIRUS OF INFLUENZA B: COMPARISON OF ANTIBODY RESPONSE WITH THAT PRODUCED BY INFECTION¹

By MONROE D. EATON, M. D., WALTER P. MARTIN, M. D., and the Personnel
of Naval Laboratory Research Unit No. 1²

Immunization of human beings with formalinized preparations of the virus of influenza A has been tried extensively. Earlier experiments were inconclusive or negative (1-3), but more recent studies (4-6) have indicated partial protection against infection amounting to a reduction of incidence by about one-half. The discovery of strains of virus (influenza B) not antigenically related to the type A virus (9, 10) made necessary the development of a vaccine against influenza B. Experiments on immunization with a formalinized allantoic fluid culture of this virus were therefore undertaken. The effectiveness of the vaccine cannot be adequately determined until an epidemic of influenza B occurs among the groups inoculated, but some indication of its antigenicity may be obtained from a comparison of the antibody response of vaccinated individuals with the antibody response resulting from infection of another group during an epidemic of influenza B.

MATERIALS AND METHODS

Preparation of vaccine.—Allantoic fluid passages done by the method of Nigg, Crowley, and Wilson (7) and amniotic fluid passages by the procedure of Burnet and Lush (8) were started from the

¹ From the Research Laboratory of the California State Department of Public Health and Naval Laboratory Research Unit No. 1, Berkeley, Calif. Received for publication January 8, 1942.

The studies and observations on which this paper is based were supported in part by the International Health Division of The Rockefeller Foundation. The opinions advanced in the paper are those of the writers and do not represent the official views of the Navy Department.

² The Unit personnel consists of: Commander A. P. Krueger; Lieutenants (junior grade) W. P. Chesbro, L. R. Rosenberg, and N. S. West; Ensigns A. S. Browne, O. J. Golub, and J. R. Mathews; Chief Pharmacist Mates I. L. Stuchmeister and T. P. Sislock; Pharmacist Mate (first class) W. L. Axelrod; Pharmacist Mates (second class) E. R. Chisholm and G. B. Saviers; Pharmacist Mate (third class) C. R. Webb, Jr.; and Hospital Apprentice (first class) H. R. Burkhead.

The authors also gratefully acknowledge the assistance of Dr. J. C. Talbot, Miss M. D. Beck, and Mr. Howard Bodily of the California State Department of Public Health.

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eighty-fourth mouse-lung passage of the virus of influenza B, strain Lee. Most of the vaccine was made from the allantoic fluid and chorio-allantoic membranes of embryos inoculated into the allantoic sac with a 1:10 dilution of infected amniotic or allantoic fluid. A small lot of vaccine was also prepared from the amniotic fluid of embryos inoculated in the amnion; but there was no evidence that this was superior to the preparations from the allantoic fluid and membranes, and the yield was smaller. Embryos 9 to 11 days old were inoculated. After 48 to 72 hours' incubation the eggs were opened, the allantoic and amniotic fluids withdrawn, and the membranes and embryos separated. Pools of fluids, chorio-allantoic membranes, and embryos from 6 to 12 eggs were titrated separately by intranasal inoculation of mice. Fluids or 10 percent suspensions of membranes which killed half of the number of mice with typical lung lesions at a dilution of 1:1,000 to 1:10,000 were saved for vaccine. Lots with lower titers were discarded. In the minced embryos from which the heads and feet had been removed, the virus titered 1:100 or less. Consequently, the embryos were not used for the preparation of vaccine.

Each lot of vaccine was tested for bacterial contamination by the usual methods and for possible neurotropic viral contaminants by intracerebral inoculation of mice. A small proportion of the mice inoculated intracerebrally died after 6 to 7 days with symptoms suggesting encephalitis. The brains of these mice showed marked congestion. This might have been due either to a neurotropic property of the Lee strain itself or to some other virus introduced during the course of the intranasal mouse passages. The egg-adapted virus was specifically neutralized by sera from persons convalescent from influenza B. Preliminary experiments indicated that there was no specific neutralization of the agent which produced neurological signs in mice after intracerebral inoculation.

Because of the foregoing observations it was considered inadvisable to use the active influenza B virus for inoculation of human volunteers. The virus was inactivated by adding 0.14 to 0.20 percent of formaldehyde. All lots of vaccine were then stored in the liquid state at 4° C. for 10 to 20 days until a few minutes before use. Tests for viral activity were done by intranasal and intracerebral inoculation of mice. Mice inoculated intraperitoneally with 0.5 cc. of undiluted preparation and tested 2 weeks later by intranasal inoculation were protected against the production of lung lesions by 1,000 M.L.D. of the Lee strain.

Combined vaccination against influenza A and B.—Human volunteers mostly 20 to 30 years of age were inoculated subcutaneously into the left arm with 1 cc. of the influenza B vaccine. At the same time 1 cc.

of the complex influenza A-distemper vaccine³ of Horsfall and Lennette (11) was inoculated into the right arm of each person. The circumstances under which this work was done made it necessary to use both vaccines at once. Blood specimens were collected from a representative group of those vaccinated before and 2 weeks after vaccination.

Neutralization tests.—Varying 4-fold dilutions of serum inactivated at 56° C. for 30 minutes were mixed with constant amounts of virus in mouse lung suspensions of the strain Lee. The dilution of mouse lung was 1 to 2 percent, representing about 10 to 20 M.L.D. The serum virus mixtures were incubated for 30 minutes at 37° C., and each dilution of serum plus virus was then inoculated intranasally into 3 Swiss mice. The lung lesions in mice dying and in those surviving for 10 days were recorded. The end point was taken as the highest even dilution of serum which protected mice against death and prevented the consolidation of more than 50 percent of the lung tissue (12). Titers were stated in terms of the reciprocal of the original dilution of serum before the addition of an equal part of virus suspension.

NEUTRALIZING ANTIBODIES OF THE VACCINATED GROUP COMPARED
WITH CASES OF INFLUENZA B

Degree of increase.—The neutralizing antibody titers of acute and convalescent serum specimens taken about 2 weeks apart from a group of 70 influenza patients who were studied during an epidemic of influenza B in the winter of 1940 (13) were compared with pre- and postvaccination serum specimens from 63 persons receiving the influenza B vaccine. The vaccinated and infected groups were comparable in age but could not in other respects be considered as strictly identical samples of the population.

From the results shown in table 1 it is evident that more of the influenza patients showed large increases in antibodies than did persons in the vaccinated group. Further analysis of the data indicates that this effect was related to the differences in initial antibody titers of the vaccinated and infected groups. Seventy-two percent of the influenza patients had antibody titers of 2 or less at the time of onset, while only 16 percent of the vaccinated group had comparably low titers before vaccination. In these groups with low initial titers, the mean increase resulting from infection was 17 times while that resulting from subcutaneous inoculation of formalinized virus was 22 times. In the smaller group of cases with initial titers of 4 to 8, the mean increase in antibodies was only 3.4 times while that of the comparable vaccinated group was 5.5 times. The least increase in

³ This vaccine was supplied by the New York laboratories of the International Health Division of The Rockefeller Foundation.

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antibodies occurred in the vaccinated group with initial titers of 16 or over which comprised 41 percent of the total.

TABLE 1.—Increase in neutralizing antibodies following vaccination with inactive virus of influenza B compared with infection

Group and number tested	Initial titers	Percent of total	Number showing increase after 14 to 28 days of—					Mean of antibody increase ¹
			0	Twice	4 to 8 times	16 to 32 times	Over 32 times	
Influenza cases (70)	0-2	72	5	3	14	19	10	17.0
	4-8	22	7	5	3	1	0	3.4
	16-32	6	2	1	0	0	0	—
Vaccinated (63)	0-2	16	1	0	2	5	2	22.0
	4-8	43	3	7	15	2	0	5.5
	16-32	41	10	8	8	0	0	—

¹ Geometric mean of the ratios of prevaccination to postvaccination titers or preinfection to postinfection titers. Does not include those showing no increase in titer.

There is at present no evidence that infection with influenza virus fails to elicit an antibody response in some persons, but this possibility should be kept in mind, especially when cases with high initial antibody titers are considered. Because of this uncertainty, the data for sera showing no increase in antibodies in the infected and vaccinated groups alike were not included in the calculation of the mean increase in antibodies. Only 4 persons with initial titers between 0 and 8 failed to develop more antibodies after vaccination.

Antibody levels 2 weeks after infection or vaccination.—In figure 1 the distribution of antibody levels of 54 convalescent sera is compared with

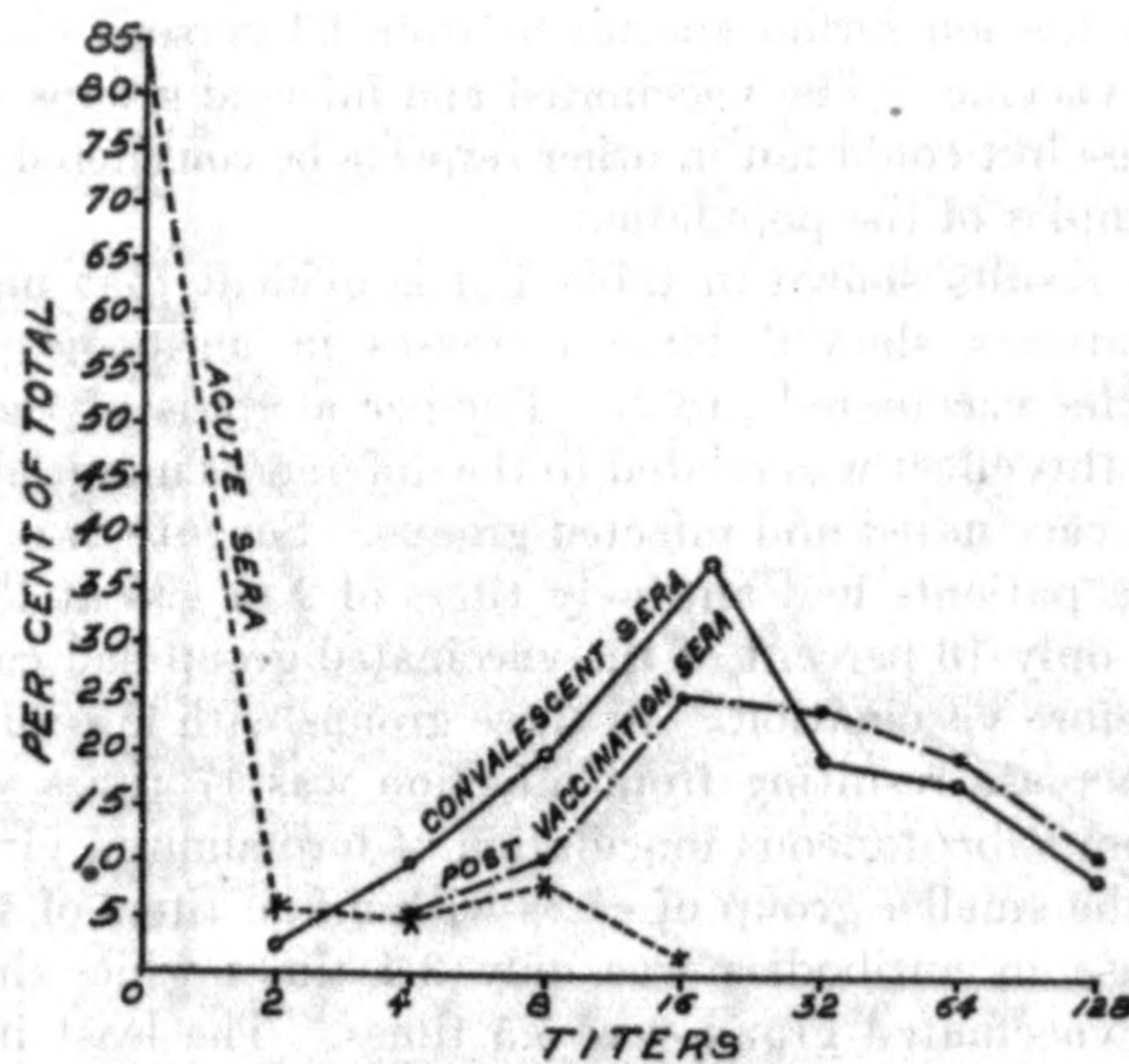


FIGURE 1.—Distribution curves for the neutralizing antibodies of acute and convalescent sera from influenza B patients and sera after vaccination with formalized virus of influenza B.

postvaccination levels in 63 sera. It is apparent that the curve for the cases which showed an increase in antibodies is similar in location and form to the curve for the vaccinated group which includes individuals both with and without an increase in antibodies. The dotted line showing the titers in 54 acute-phase serum specimens is included for comparison. Roughly 90 percent of the sera from influenza convalescents and from vaccinated persons had a titer of 8 or above, while only 10 percent of the acute-phase sera showed this level of antibodies.

The results presented in table 1 and figure 1 indicate that, as far as circulating antibodies are concerned, the response resulting from vaccination with formalinized influenza B virus, prepared as described, is similar to that resulting from infection.

RESPONSE OF COMPLEMENT-FIXING ANTIBODIES

The results presented in table 2 indicate that the increase in complement-fixing antibodies after vaccination with the inactive influenza B virus was less definite than the response to infection. This is in contrast to the results with neutralization (compare table 1). In the infected group the mean increase in complement-fixing antibodies exceeded the mean increase in neutralizing antibodies. In the vaccinated group, on the other hand, the mean increase in complement-fixing antibodies was less than the mean increase in neutralizing antibodies. Discrepancies between complement fixation and neutralization tests are indicated by the footnotes to table 2. Failure to detect an increase in complement-fixing antibodies in pairs of sera showing an increase in neutralizing antibodies may have been due in part to the lack of a sufficiently sensitive type B antigen. In some of the vaccinated individuals the increase in complement fixation titers may have been exaggerated by a slightly increased reactivity of the post-vaccination specimens with normal mouse lung.

TABLE 2.—Increase in complement-fixing antibodies following vaccination with inactive virus of influenza B compared with infection

Group and number tested	Initial titers	Percent of total	Number showing increase after 14 to 28 days of—					Mean of antibody increase
			0	Twice	4 to 8 times	16 to 32 times	Over 32 times	
Influenza cases (45)	0-2	71	16	1	1	16	8	31.0
	4-8	27	2	1	7	2	0	6.7
	16-32	2	0	1	0	0	0	-----
Vaccinated (43)	0-2	14	0	0	4	2	0	10.0
	4-8	56	1	13	8	2	0	2.8
	16-32	30	16	7	0	0	0	-----

¹ 4 of these cases showed an increase in neutralizing antibodies.
² 4 out of 6 persons in this group showed an increase in neutralizing antibodies.
³ 2 persons in these groups showed no detectable increase in neutralizing antibodies.

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COMPARISON OF NEUTRALIZING ANTIBODY RESPONSE TO INFLUENZA A AND B FOLLOWING COMBINED VACCINATION

In the course of these studies the question arose as to whether or not human beings receiving influenza A and B viruses in two separate inactive formalinized preparations responded with the production of antibodies in equal degree to both. Many of the sera studied had high initial neutralizing antibody titers either to the type A or to the type B influenza virus. Consequently the increases in these cases were not comparable because of the difference in initial levels.

The pre- and postvaccination antibody titers against influenza A and B in a group having similar titers to both viruses before vaccination are summarized in table 3. It is obvious that some individuals showed a marked increase to influenza A, but little or none to influenza B, while the reverse was true in other cases. Less than half of the group showed any indication of equivalent response to both antigens.

TABLE 3.—Comparison of neutralizing antibody responses to influenza A and B after combined vaccination of individuals having similar initial antibody titers for both viruses

Initials	Titer influenza A		Titer influenza B	
	Prevaccination	Postvaccination	Prevaccination	Postvaccination
N. B.	4	4	4	32
V. L. S.	4	96	0	0
R. T.	4	96	8	8
B. C. G.	8	16	8	64
V. C. D.	8	32	8	32
H. R. L.	8	96	8	16
H. P.	8	16	8	16
J. L. D.	16	64	8	32
F. R. F.	16	64	16	64
M. E. N.	32	128	16	16
J. C. D.	32	96	32	32
J. D. G.	64	128	16	32

SUMMARY AND CONCLUSIONS

When the degree of antibody increase following vaccination and infection with the virus of influenza B is considered, the two groups, infected and vaccinated, are not strictly comparable because the initial antibody titers tend to be higher in the vaccinated group. However, it appears that the subcutaneous injection of inactive virus raises the titers of neutralizing antibodies to a level similar to that following infection. The less definite response of complement-fixing antibodies in the vaccinated group indicates that the antigenic stimulus produced by the inactive virus was not identical with that of infection.

Because of the present uncertainty as to the role of circulating antibodies in immunity to viruses, claims for effectiveness of any

vaccine should not be based on considerations of antibody response. The results just reported indicate that formalinized allantoic fluid preparations of the virus of influenza B have a relatively high antigenicity as judged by the production of neutralizing antibodies.

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OBSERVATIONS ON EXPERIMENTAL MALARIA CONTROL DRAINAGE DITCH LININGS¹

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INTRODUCTION

"Building malaria out" is a term in common usage among malaria control workers. The term may be defined as precluding the creation of anopheline (malaria-transmitting) mosquito breeding places by the inclusion of antimosquito breeding provisions in the design, construction, and maintenance of engineering works which involve both natural

¹ From the Division of Infectious Diseases, National Institute of Health.

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and artificial bodies of water. This principle frequently is applied in the case of water impoundages, highways, railroads, flood control works, and other projects wherein "man-made" mosquito-breeding places could result. The practice is followed when the inverts of drainage ditches are lined with impervious materials and otherwise stabilized to promote durability. The stabilization of such ditches is a more permanent, a more positive, and generally a less expensive method of mosquito control than recurrent cleaning, grading, and larvicidal operations.

Lined ditches are not advocated to the exclusion of all other types of drainage. In many instances open earth ditches are entirely adequate and frequently only funds for their cheaper initial construction can be provided. On the basis of their long life, efficiency, and their generally lower total cost, i. e., construction and maintenance, lined ditches should be the choice where the finances of the community will allow (fig. 1).

Ditch lining is important in the field of malaria control as is evidenced by the extent of its use. (See fig. 2.)

The Public Health Service, through the Office of Malaria Investigations, has conducted studies of concrete and brick ditch linings. These studies were initiated on a small scale, during the latter part of 1930, in the city of Memphis and in Shelby County, Tennessee. They were intensified from 1936 through 1938. These studies have served as an important impetus to the practice of ditch stabilization by malaria control engineers in the United States.

The chief purpose of the investigations was to develop ditch linings which could be constructed at minimum cost, without sacrifice of durability. Leanest concrete mixes and thinnest slab sections permissible as well as simplicity in construction methods were among the principal objectives of the studies.

The removal of residual water within the time limit of the incubation period of mosquitoes is of extreme importance in the control of mosquito production. From this standpoint, the lined ditches have functioned satisfactorily with a negligible requirement of repair. Repair purposely has been withheld in order that the ditches might be subjected to conditions equivalent to those most demanding in the field. The experimentally lined ditches have been in service for periods varying from 2 to 10 years, and their durability appears to be that expected from concrete and brick materials. Their general condition to date leaves little to be desired from the standpoints of stability, durability, and residual water removing efficiency.

Monolithic concrete linings, linings of brick, and of precast concrete slabs were considered in the studies. Observations on these experimental projects are presented.

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PLATE I



FIGURE 1.—Before and after installation of durable malaria control drainage. (Photographs by courtesy of Nelson H. Rector, Mississippi State Board of Health.)

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013

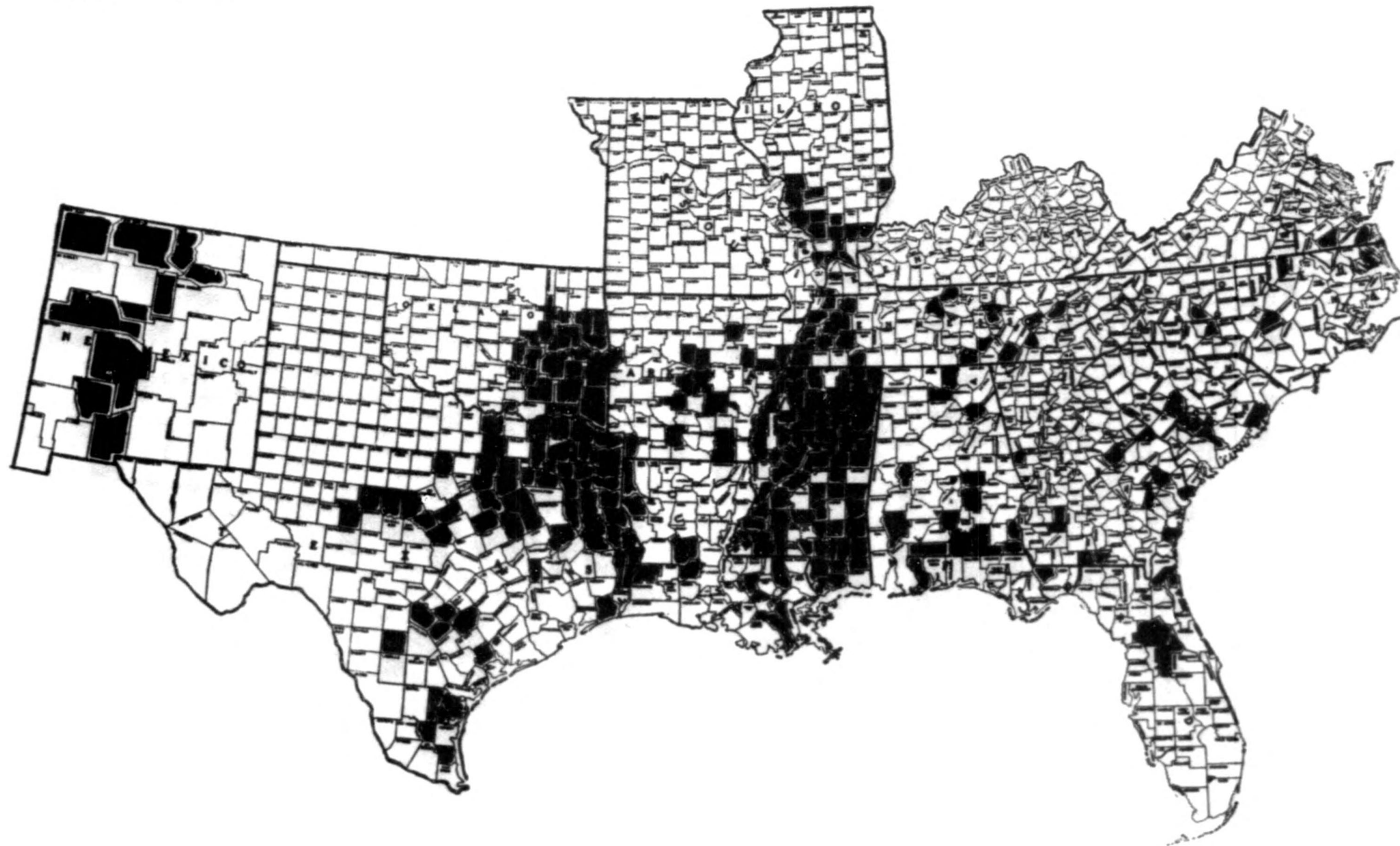


FIGURE 2.—Counties in which durable malaria control drainage projects were being carried on as of December 31, 1940.

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PRELIMINARY CONSIDERATION

For the most part, the ditches selected for study were typical "field ditches" 3 to 4 feet deep. Effort was concentrated on search for linings suitable for small ditches as encountered in suburban, small town, village, and heavily populated rural situations, since here lies the greatest present need for an inexpensive, easily constructed ditch lining.

The experimental linings constructed in the inverts of the ditches vary from 24 to 90 inches in width and average about 30 inches. In most cases ditch banks were sloped $1\frac{1}{2}$ to 1. Grades generally are under 1 percent. Topography of the area is gently sloping. For the period of record, temperature and precipitation reported for the area (1) was as follows:

Temperature = average 61.9° F.
 absolute lowest -9° F.
 absolute highest 106° F.
 Precipitation = average for year 48.15 in.
 greatest in 24 hrs. 10.48 in.
 Freezes and thaws over past 4 years ² = 146

Soil in the area is classified as Memphis silt loam (2). Vegetation cover, for the most part, consists of cultivated fields and pasture lands with an occasional small growth of hard woods.

The linings were designed to cover the ditch bottoms and extend up the banks a few inches above the observed erosion line. These factors were determined by inspection in the field. Following installation of the linings the ditch banks were "blanket sodded" with Bermuda grass sod, in most instances.

Cross section of a typical lining installation in a ditch three feet deep, with banks sloping $1\frac{1}{2}$ to 1, is shaped like the arc of a circle, having a radius of 1.25 feet; the chord measures 2 feet, the arc 2.5 feet, and the depth or rise of chord 6 inches.

Inspections of the lined ditches have been made at periods following decided seasonal changes, most often during the spring and fall, and also following times of heavy rainfall.

PLAIN MONOLITHIC CONCRETE LININGS

After rough excavation, grade stakes were set above the established grade line a distance corresponding to the thickness of the lining, and final or finish grading was then done. These stakes were set at 5- or 10-foot intervals on the center line of the ditch. A nail was set in each stake to guide the measurements in locating the edges of the lining. Wooden forms were then set in place. (See fig. 3.) The

¹ Period during which majority of linings were in place.

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type of form chosen depended on the thickness of the lining to be placed. If a 2-inch slab was to be cast, S4S two by fours 12 feet long were used; these sizes varied with the thickness of the proposed lining. Three-quarter inch holes were bored on the center line of the forms, 6 inches from each end and in the middle of each form. Tapered pins of either wrought iron or wood, about 6 inches long, were driven through the holes into the earth to secure the forms in place. No nails were used in placing the forms. Forms for 100 feet of lining were set at one operation. A cross-section form for a 1-inch expansion joint was set at each end of the 100-foot sections. One-half the chord of the arc of the cross section of the lining was established. This figure was used in locating the position of the forms, by hand rule, with relation to the nails in the center-line grade stakes. With all material at hand, 16 minutes was the average time required for two men to set forms for 100 linear feet of ditch lining. Before the concrete was placed the ground was "wetted down" by sprinkling to prevent the absorption of water from the freshly cast concrete slab.

A 3½ cubic foot batch concrete mixer was used on all projects. Mixer runs were timed 1 full minute or more. All materials necessary for 200 linear feet of lining were placed at 200-foot intervals along the ditch bank. The mixer was located on the bank, with room enough between the mixer and the ditch for man and wheelbarrow to pass. For the most economical operation, it was found that three men were sufficient. One man measured and fed the material into the mixer. This man also operated the mixer. A second man wheeled the concrete from the mixer to location. A third man used shovel, float, straight edge, and template to place the concrete in the form.

A straight edge reaching from grade stake to grade stake was used in finishing to assure a uniform flow line. A cross-section template was used to obtain uniformity in cross section.

In most instances header walls (key or curtain walls) 2 inches thick and 12 inches deep were constructed at the upstream ends of slabs. Arrangements for this wall were completed before any concrete was poured. Weep holes 1 inch in diameter were placed in the bottom of the invert lining at 10-foot intervals by means of plugs set through the fresh concrete.

Forms were removed immediately following pouring and shaping. The concrete was cured by covering with 2 inches of wet earth and allowing the earth to remain for 10 days except in cases where curing intentionally was omitted for study purposes.

Forms were kept well covered with a coat of heavy oil.

Data on materials used and other pertinent information are as follows:

Cement.—Standard grade Portland cement (made in U. S. A.).

Water.—Memphis city water.

Water-cement ratio.—6 to 7 gallons of water per sack of cement.

Character of concrete.—“Moist, stiff and workable”.

Cement and aggregate mixes.—1:2:4 to 1:3:6 and 1:4:5.

Range of ratio of fine aggregate to coarse aggregate:

Using 3/8 in. coarse aggregate—0.33 to 0.44.

Using 1/2 in. coarse aggregate—0.33 to 0.44.

Graduation of aggregates:	Percent
Sand, passing 3/8-inch sieve.....	100.0
Sand, passing No. 4 sieve.....	100.0
Sand, passing No. 16 sieve.....	82.8
Sand, passing No. 50 sieve.....	5.4
Sand, passing No. 100 sieve.....	.7
3/4 inch coarse, passing 1-inch sieve.....	100.0
3/4 inch coarse, passing 3/4-inch sieve.....	100.0
3/4 inch coarse, passing 1/2-inch sieve.....	90.6
3/4 inch coarse, passing 1/4-inch sieve.....	39.0
3/4 inch coarse, passing No. 4 sieve.....	15.6
3/8 inch coarse, passing 3/8-inch sieve.....	100.0
3/8 inch coarse, passing 1/4-inch sieve.....	75.0
3/8 inch coarse, passing No. 4 sieve.....	40.6
3/8 inch coarse, passing No. 8 sieve.....	33.6

Organic impurities in aggregate=light straw color in sodium hydroxide test.

Fine material in aggregate=1/32-inch deposit of silt in jar test.

The cost of plain monolithic concrete lining as shown in table 1 is based on the following unit costs (these unit costs also apply to all other linings described herein):

Item:	Unit cost ¹
Unskilled labor.....	30¢ per hour.
Cement.....	75¢ per sack.
Sand.....	\$1.40 per cubic yard.
Gravel.....	\$1.40 per cubic yard.
Water.....	Free.
Sod.....	Free.
Forms (material and labor) negligible.	

Labor charges for form assembly, and for concrete mixing, pouring, floating, finishing, and curing, all are included under “labor.” Charges for engineering services, supervision, and labor for rough excavation and finish grading are not included.

One case of failure due to compression has been observed in the plain monolithic concrete linings. In this instance a transverse crack had occurred at the end of a section where no provision had been made for an expansion joint between the two sections (fig. 4), indicating that ample provision for expansion joints should be made between individual sections. Small amounts of vegetation have been observed growing in weep holes and uncaulked expansion joints. However, only in rare instances was this sufficient to cause any appreciable retardation of flow and deposition of silt. Objectionable

¹ These prices f. o. b. job.

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vegetation growth possibly might be eliminated by caulking the joints or by overlapping the slab ends as is discussed under "precast slabs." Transverse cracks, longitudinal cracks, and holes in concrete have been noted in thin monolithic slabs (fig. 5).

TABLE 1.—Cost of plain monolithic concrete ditch lining¹

Size of gravel, inches	Thickness, inches	Mix	Cost per square foot		
			Labor	Material	Total
.....	1 1/2	1:3:6	\$0.0065	\$0.0078	\$0.0143
.....	1 1/4	1:2:4	.0063	.0160	.0223
.....	1	1:2:4	.0094	.0244	.0338
.....	1	1:2.5:4	.0061	.0188	.0249
.....	1	1:4:5	.0078	.0187	.0265
.....	1 1/4	1:2.5:4	.0064	.0218	.0282
.....	1 1/4	1:3:6	.0097	.0207	.0304
.....	1 1/4	1:4:5	.0084	.0214	.0298
.....	1 1/2	1:2.5:5	.0084	.0286	.0370
.....	1 1/2	1:3:5	.0061	.0282	.0343
.....	1 1/2	1:3.5:5	.0077	.0269	.0346
.....	1 1/2	1:3:6	.0078	.0279	.0357
.....	2	1:1.5:3	.0228	.0481	.0709
.....	2	1:2:4	.0160	.0375	.0535
.....	2	1:2.5:5	.0166	.0331	.0497
.....	2	1:3:5	.0032	.0276	.0308
.....	2	1:3:6	.0138	.0338	.0476
.....	1 1/2	1:3:5	.0092	.0220	.0312
.....	1 1/2	1:3:6	.0112	.0245	.0357
.....	2	1:2:4	.0111	.0327	.0438
.....	2	1:2.5:5	.0110	.0254	.0364
.....	2	1:3:6	.0091	.0302	.0393
.....	2 1/2	1:3:5	.0091	.0425	.0516
.....	2 1/2	1:3.5:5	.0046	.0369	.0415
.....	2 1/2	1:4:5	.0058	.0364	.0422
Graded	1 1/2	1:3:5	.0071	.0236	.0307
Do.....	1 1/2	1:3:6	.0060	.0213	.0273
Do.....	2	1:3:4	.0070	.0334	.0404
Do.....	2	1:3:4.5	.0070	.0320	.0390
Do.....	2	1:3:5	.0070	.0311	.0381
Do.....	2	1:3.5:5	.0067	.0322	.0389
Do.....	2	1:3.5:5	.0073	.0316	.0389
Do.....	2	1:3:6	.0070	.0293	.0363
Do.....	2	1:3 1/2:6	.0074	.0316	.0390
Do.....	2	1:4:5	.0077	.0300	.0377
None.....	1 1/2	1:4 1/2	.0054	.0088	.0142

¹ Average of linings installed under conditions listed.

An analysis of the data available shows a correlation between the slab thickness and the frequency of occurrence of these defects. It may be noted in table 2 that the frequency of each of these phenomena increases with decreasing thicknesses of slab cross section. For practical purposes it appears that a slab thickness of 2 to 2 1/2 inches is the minimum which should be employed.

TABLE 2.—Frequency of transverse and longitudinal cracking and disintegration in monolithic slabs

Thickness, inches	Months of service	Transverse cracks per 100 linear feet			Percent of lining with longitudinal cracks	Percent of sections with holes
		Average	Range	Median		
1.....	39-45	13.5	10-17	75.0	100
1.....	40-45	7.3	2-13	9.0	9
1 1/4.....	34-42	6.5	0-16	7	1.9	4
2.....	22-45	5.5	1-9	6	1.9	4
2 1/4.....	36-40	2.1	0-4	2	0.0	0

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PLATE III

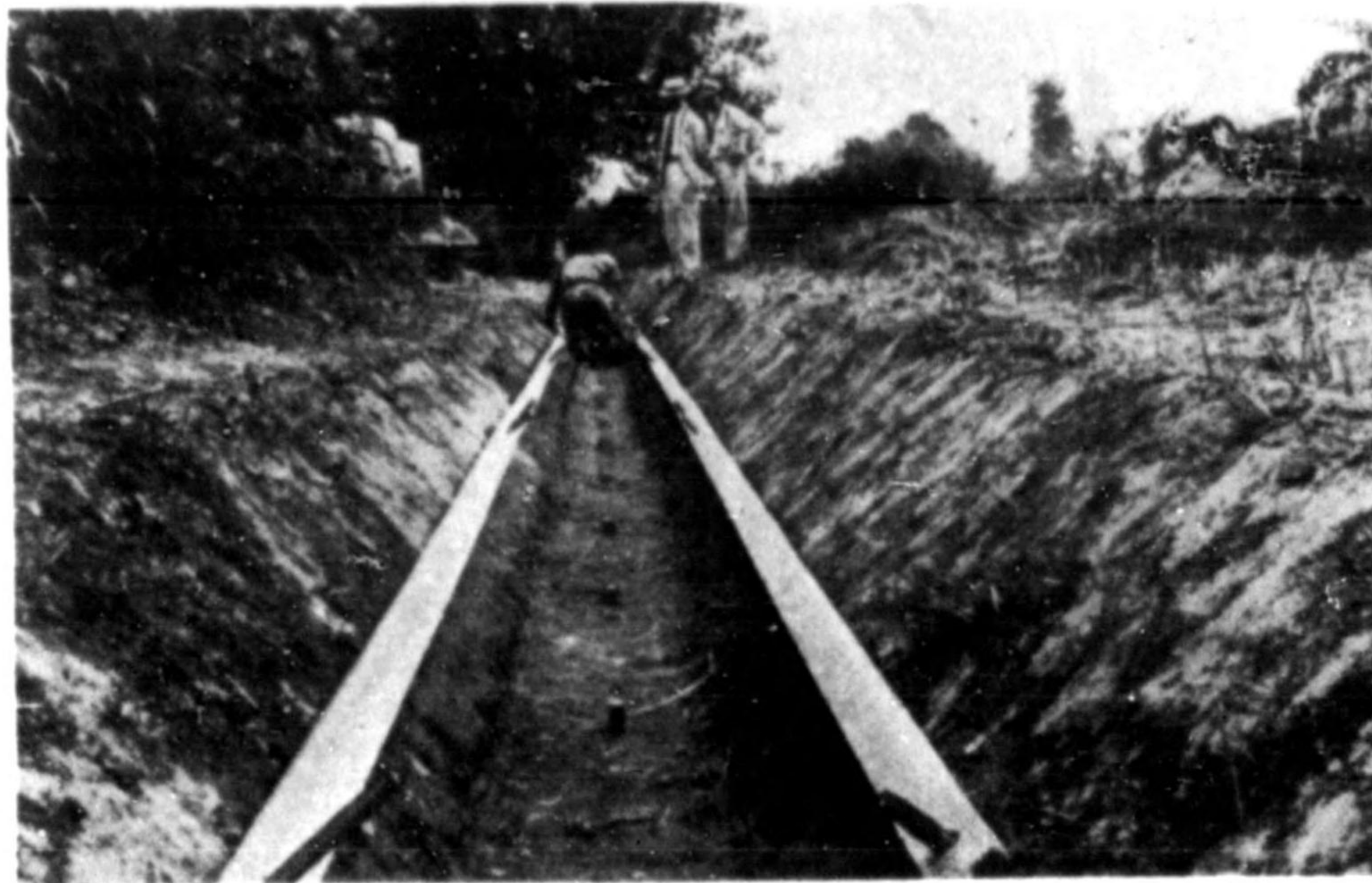


FIGURE 3.—Ditch prepared for lining. Note forms and center-line stakes in place.



FIGURE 4.—Crack at extreme left (arrow) caused by compression resulting from lack of expansion joint between the two sections. Dark line along ends of slabs (center) is not an opening but a shadow cast by slab on right which has "overlapped" slab on left.

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PLATE IV

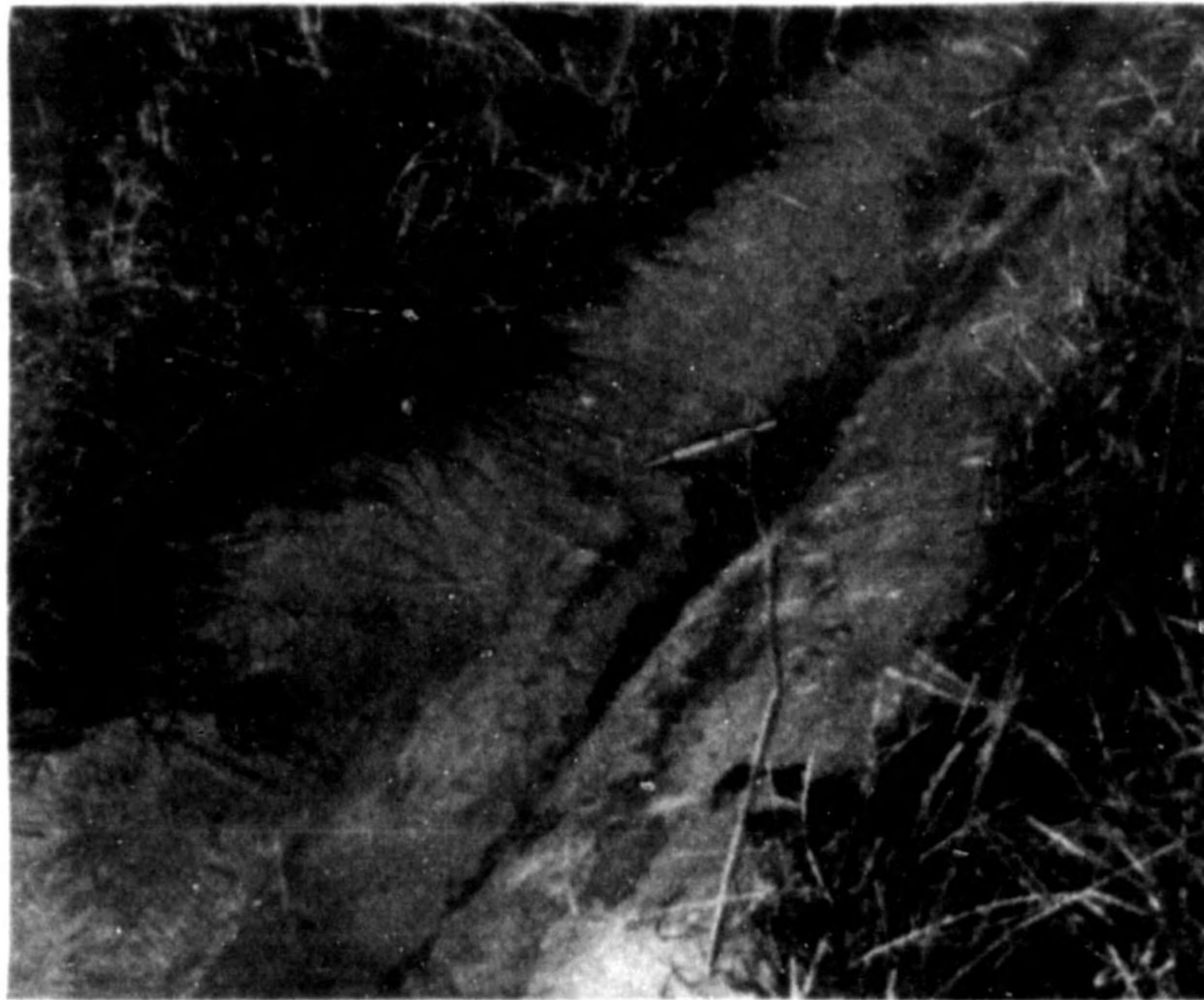
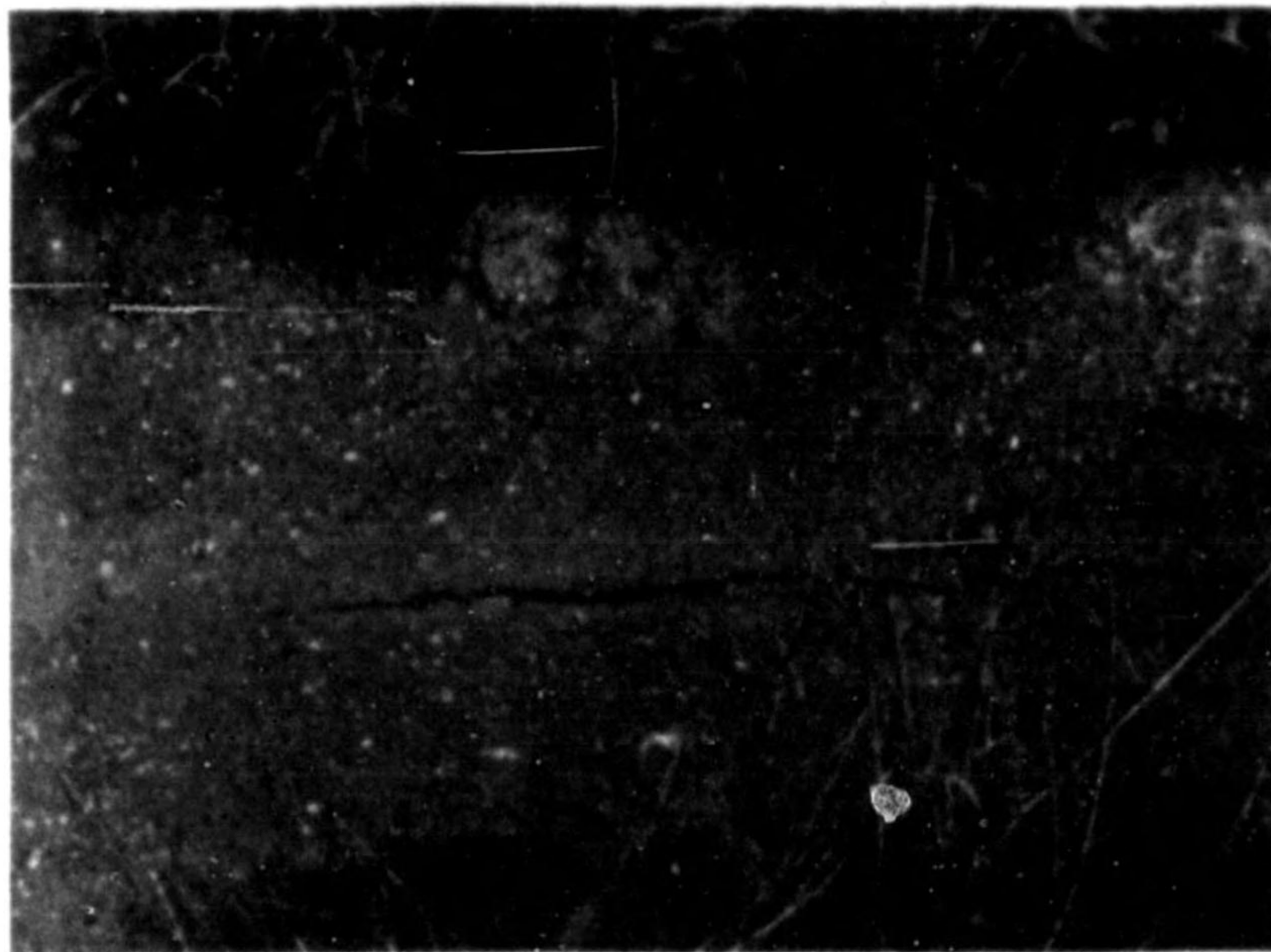
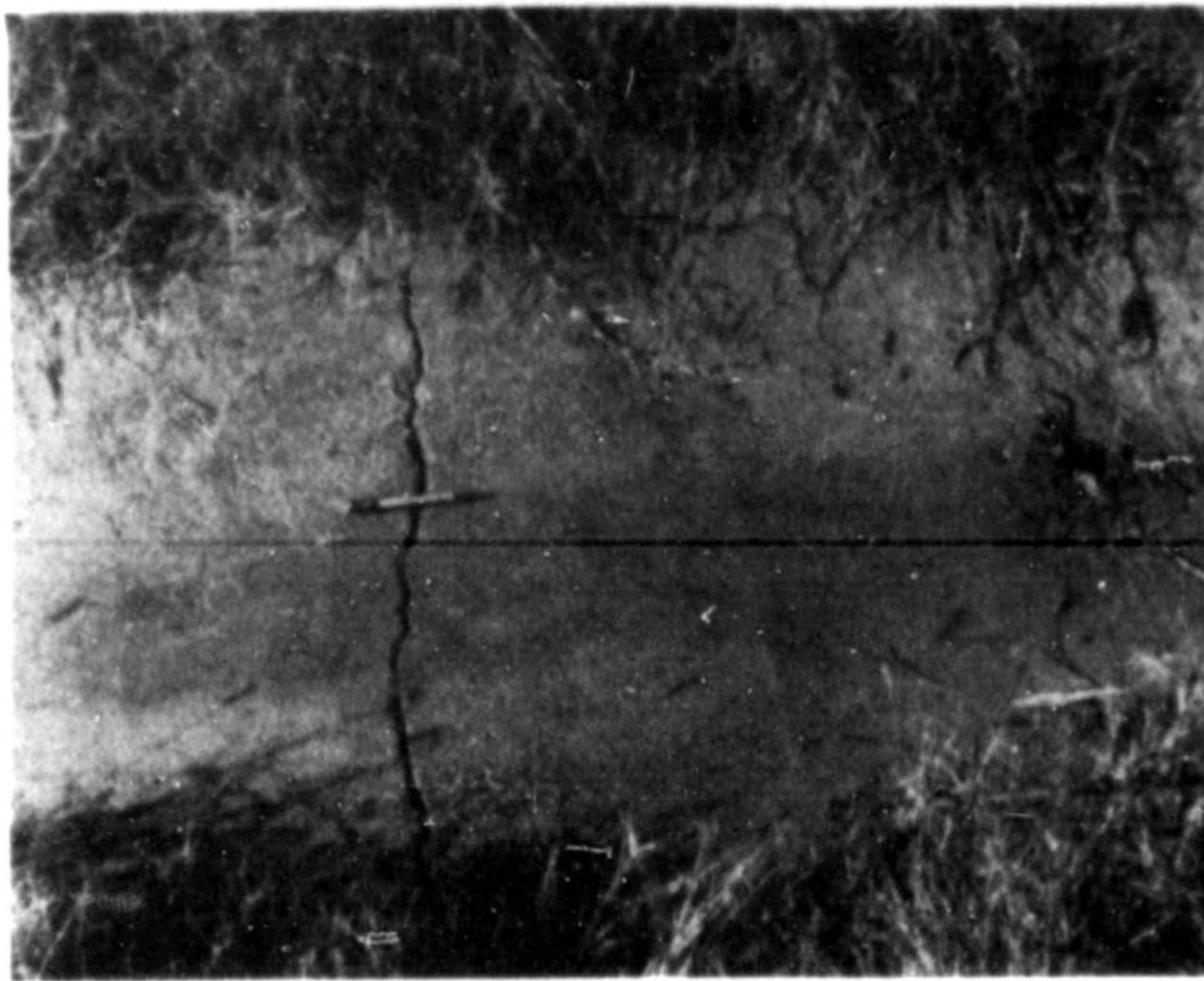


FIGURE 5.—Transverse and longitudinal cracking and holes in monolithic concrete slabs.

It should be stated that none of these defects have exhibited any harmful effect upon the residual water-carrying function of the linings. However, longitudinal cracks and holes, if left unrepaired, might exert a harmful effect on the linings themselves by rendering them vulnerable to undermining.

There are indications that transverse cracking may increase with increasing age of the concrete, perhaps at a decreasing rate, as the lining is subjected to more wetting, drying, freezing, and thawing (as has been the experience with concrete highways) (3). For example, there was a noticeable increase in the number of transverse cracks during the winter of 1939-40, a winter which was extremely severe in the Memphis area. In some instances there is evidence of flaking or chipping at the transverse cracks (see fig. 6).

It was considered desirable to control the position and direction of transverse cracking as these cracks, when formed at an angle, later developed into a Y or "crow foot" (the small piece of slab between the forks of the Y may become dislodged and lead to undermining of the lining (fig. 7)). Control of cracking was attempted by constructing dummy or false transverse joints by means of an edging tool, at right angles to the line of flow. The depth of these false joints was half the thickness of the lining. Observations to date indicate that control of cracking can be accomplished by this means (fig. 8). It may be seen in table 3 that dummy joints 3 feet apart prevent cracking. While no dummy joints have been installed at distances of 5 or 7.5 feet apart, some such greater distance might suffice.

TABLE 3.—Cracks in plain monolithic concrete linings (2 inches thick) provided with dummy transverse joints (controlled cracks at dummy joints not included)

Distance between joints (feet)	Months service	Transverse cracks per 100 linear feet
33	46	14
10 to 18	45	11
10	45	12
3	43	0

¹ Present in fall of 1939; no additional cracks during severe winter of 1939-40.

As stated before, determination of leanest concrete mixes permissible was one of the objectives of the studies. Mixes from 1:2:4 up to 1:3:6 and 1:4:5 with water ratios from 6 to 7 gallons of water per sack of cement were used. In an attempt to evaluate the effect of these factors on the durability of concrete linings it has been considered desirable to include a consideration of some other factors, viz, proportioning of aggregates, plasticity, and curing. All these factors are interrelated and exert an influence on the durability of concrete separately and in combination. Attempt has been made to determine

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whether there is any significance in conditions of abrasion, cracking, absorption, and strength of the concrete in the various projects.

A visual inspection reveals no evidence of detrimental wear from abrasion in any of the linings. In this connection it should be stated that there is remarkably little abrasive material carried by the ditches comprising these studies. This is especially true when provisions have been made for the introduction of surface water, along the course of the ditches, over grass-sodded aprons or concrete aprons to prevent bank scouring.

There was but a slight significant difference in transverse cracking when considered by varying mixes and by curing or absence of curing. It was noted that slightly fewer transverse cracks occurred in the "richer" concrete mixes and, as pointed out previously, fewer transverse cracks occurred in the thicker slabs.

Through the cooperation of the Portland Cement Association tests on absorption and compressive strength were conducted on a limited number of samples. All samples submitted for test were 2 inches thick and had been cured by covering with 2 inches of wet earth for 10 days. The absorption tests on samples taken from linings in service 38 to 49 months were uniformly low, ranging from 3.6 to 5.1 percent absorption by weight after 24 hours in water. These figures are well within those set for good concrete.

Samples submitted for test for compressive strength consisted of right-angle parallelepipeds, approximately 6 by 6 inches by lining thickness, broken from the linings. Except from the 1:2:4 mix sample, 2-inch test cubes could not be cut from the samples by sawing with the equipment available. The samples were described as "very open popcorn-like composition." It was reported that "the test specimens would shatter on sawing and when the saw would strike the coarse pebbles in the mixture, they would fly out, causing the concrete to break up." The cube from the one sample tested gave a compressive strength of 5,510 pounds per square inch compression, which when converted to 6- by 12-inch cylinder would equal 4,794 pounds per square inch. (Mix=1:2:4; water-cement ratio=7 gallons; cured 2 inches wet earth, 10 days; $\frac{3}{8}$ -inch gravel; in service 51 months.) With reference to the quality of the test specimens it was suggested that there may have been (a) insufficient compaction, (b) too low a sand-gravel ratio, (c) a need for proportioning and grading of the fine and coarse aggregates so as to secure a more dense, homogeneous mass, or (d) a harsh working concrete. In this connection the method of curing also should be examined.

These possibilities may be explained by the following considerations: (a) Lack of compaction may have occurred, as suggested by the description of the fresh concrete as being "moist-stiff-workable." While such concrete may have been workable, its consistency, "moist,"

and plasticity, "stiff," may still have left something to be desired. (b) The sand-gravel ratio was somewhat below that generally recommended, viz, 0.33 to 0.44 vs. 0.55 to 0.77 for $\frac{3}{4}$ -inch coarse aggregate and 0.33 to 0.44 vs. 0.40 to 0.60 for $\frac{1}{4}$ -inch coarse aggregate. (c) Lack of homogeneity may have occurred, as an examination of the sieve tests on the aggregates (previously given) showed, at best, a questionable graduation. (d) Harshness of mix may have resulted from the use of the high-aggregate mixes. (e) It is suggested that curing concrete with wet earth is at best a questionable practice; unless water is readily available in the field the degree of wetness of the earth is debatable. These factors, in combination with the possible use of sun-dried aggregates, present a hazard to the water content of freshly cast concrete. Incidentally, in well-cured concrete there is less volume change and consequently less early shrinkage with resultant cracking. Water tightness and wear resistance are likewise enhanced.

It should be noted that these linings have been in service from a minimum of 38 months to a maximum of 51 months during which time they have been subjected to severe weather conditions. Up to the present time no unusual failures have occurred; the effects of future frost action remains to be seen. Header (key or curtain) walls were placed in some instances. As has been stated, grades encountered are under 1 percent and it is possible that this may account for the fact that no failures were observed which could be assigned to a difference in construction, i. e., with or without header walls.

Weep holes at 10-foot intervals were employed to relieve hydrostatic pressure. In some instances grade stakes were left in place flush with the slab surface. This was done to determine whether it might be possible to use these openings in lieu of weep holes. It has been observed in some instances that hydrostatic pressure, ground movement of plastic soil, or freezing and thawing action have forced these stakes upward several inches (fig. 9). This suggests that a more desirable practice would be to provide weep holes at the time of construction or that the grade stakes should be driven through for some distance following setting of the concrete.

Flash run-off following heavy rains on some occasions subjected newly installed monolithic linings and freshly blanket-sodded banks to intense scouring action. Even under these destructive conditions the linings remained intact and in place, as may be seen in figure 10. Only repair to the freshly sodded banks was necessary.

REINFORCED MONOLITHIC CONCRETE

Effort was made to determine any significant differences between the durability of plain and lightly reinforced concrete linings. Lin-

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ings were installed reinforced with No. 19 wire poultry netting, 2-inch mesh, and 12½-gauge 4-point barb wire.

Operations were essentially the same as those described under the method of construction of plain monolithic linings. Light reinforcement appears to offer but slight advantage over plain monolithic construction. The same types of failures have been observed; however, with reference to transverse cracking there appears to be slight advantage in favor of the reinforced concrete. That this advantage is sufficient to warrant the additional cost for material and labor is open to question.

TABLE 4.—Comparison between transverse cracking of plain and reinforced monolithic concrete ditch lining

Thickness, inches	Months of service		Transverse cracks per 100 linear feet	
	Plain	Reinforced	Plain	Reinforced
1	39-45	42	13.5	7
1	40-45	40	7.3	4
1½	34-42	42-45	6.5	7
2	22-45	45	5.5	3.2

TABLE 5.—Cost of reinforced monolithic concrete ditch lining¹

Type of reinforcing	Size of gravel, inches	Thickness, inches	Mix	Cost per square foot		
				Labor	Material	Total
Poultry wire	3/8	3/4	1:3:6	\$0.0073	\$0.0193	\$0.0266
Do	3/8	1	1:2:3.5	.0067	.0187	.0254
Do	3/8	2	1:1.5:3	.0238	.0484	.0722
Do	3/8	2	1:2.5:4	.0186	.0433	.0619
Do	3/8	2	1:2.5:5	.0163	.0396	.0559
Do	3/8	2	1:6	.0063	.0160	.0223
Barb wire	None	1½	1:2:4	.0116	.0277	.0393
Do	None	1½	1:3:6	.0079	.0271	.0350
Do	None	2	1:1.5:3	.0207	.0486	.0693
Do	None	2	1:2:4	.0112	.0395	.0507
Do	None	2	1:3:6	.0153	.0365	.0518
Barb wire and poultry wire	3/8	2	1:2:4	.0209	.0423	.0632

¹ Average of linings installed under conditions listed.

PRECAST CONCRETE SLAB LININGS

Several types of precast concrete slab ditch linings were cast and installed. These sections, for the most part, were cast in small units for one-man handling. They varied in shape and method of tying-in or together. Some⁴ were fastened by wires threaded transversely through the sections (4); others depended upon locking arrangements and weight for stability. The various types included slabs with butt joints, interlocking joints, tongue and groove joints, and overlapping joints (5).

⁴ The Shelby County, Tennessee, Health Department cooperated in this work.

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PLATE V

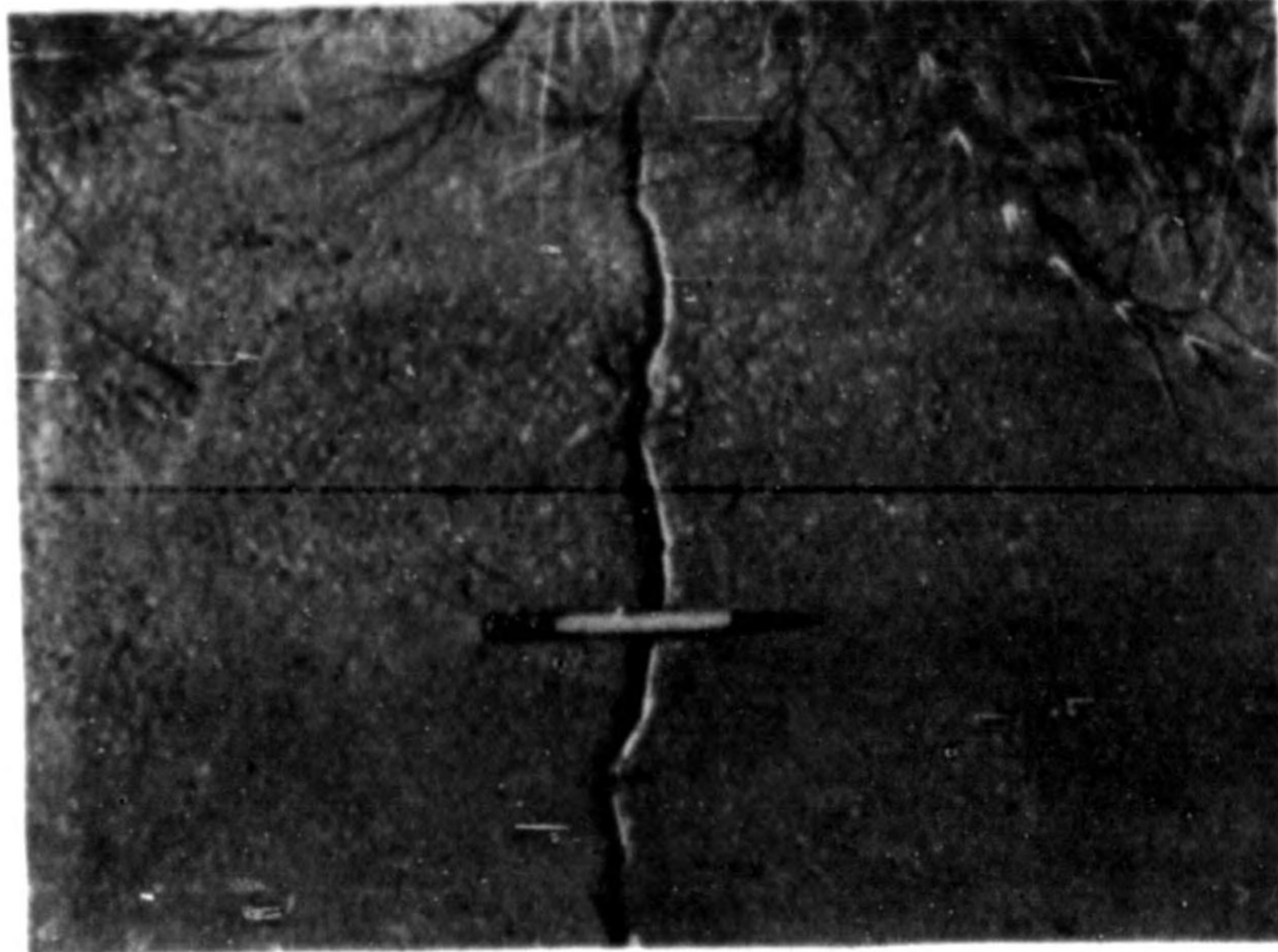


FIGURE 6.—Flaking of concrete at transverse crack.

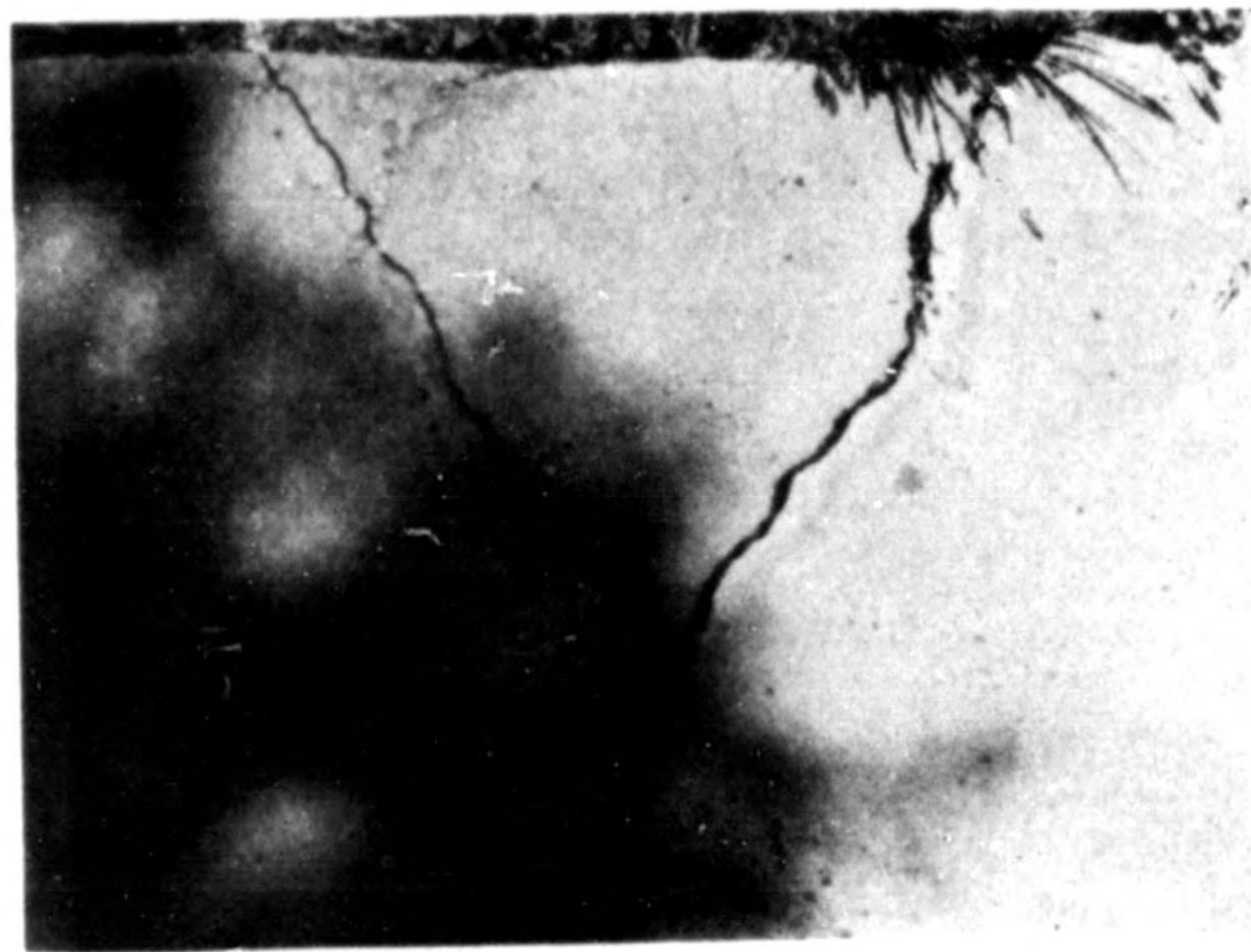


FIGURE 7.—Y or crowfoot crack.

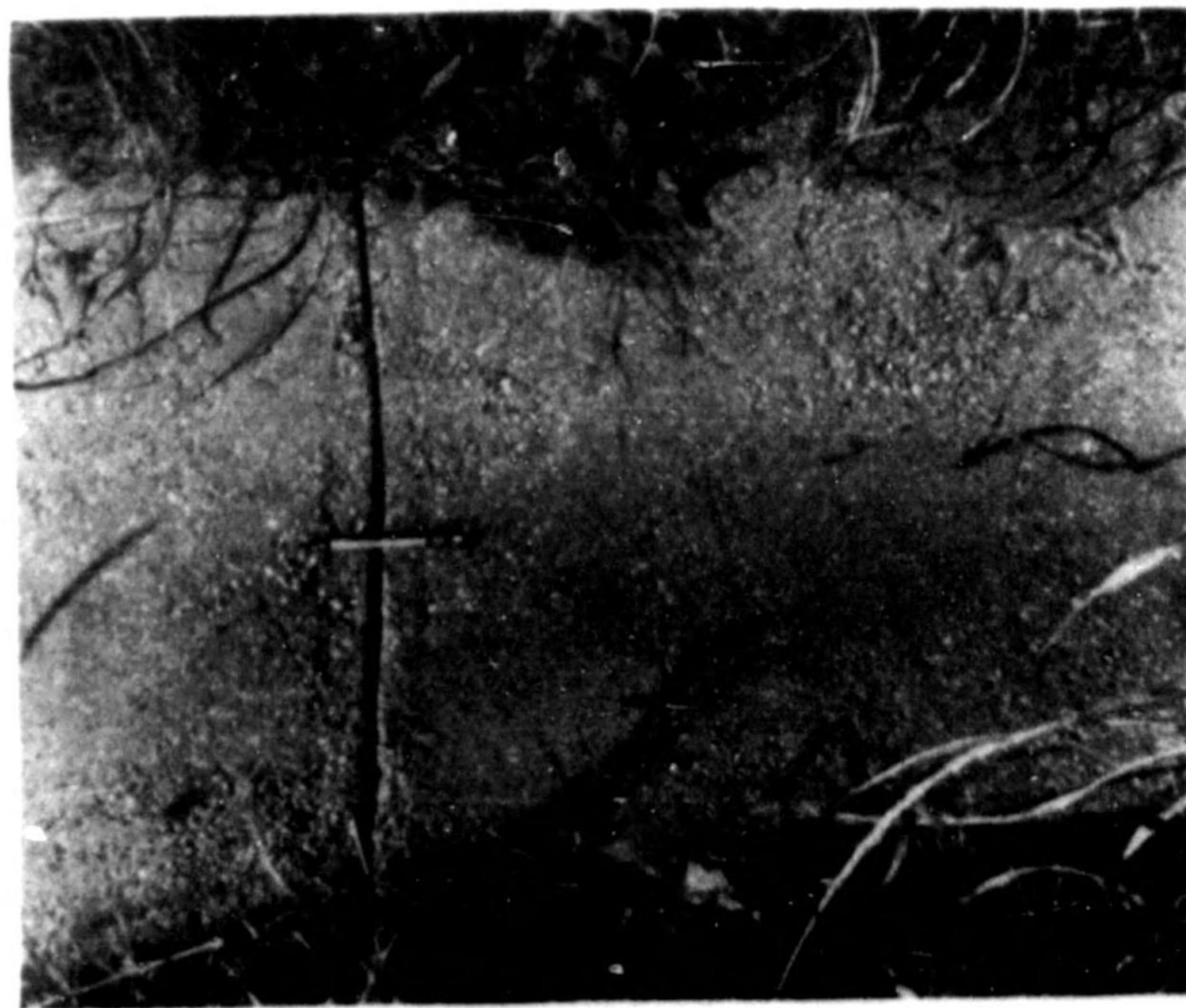


FIGURE 8.—Dummy or false transverse joint.

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PLATE VI

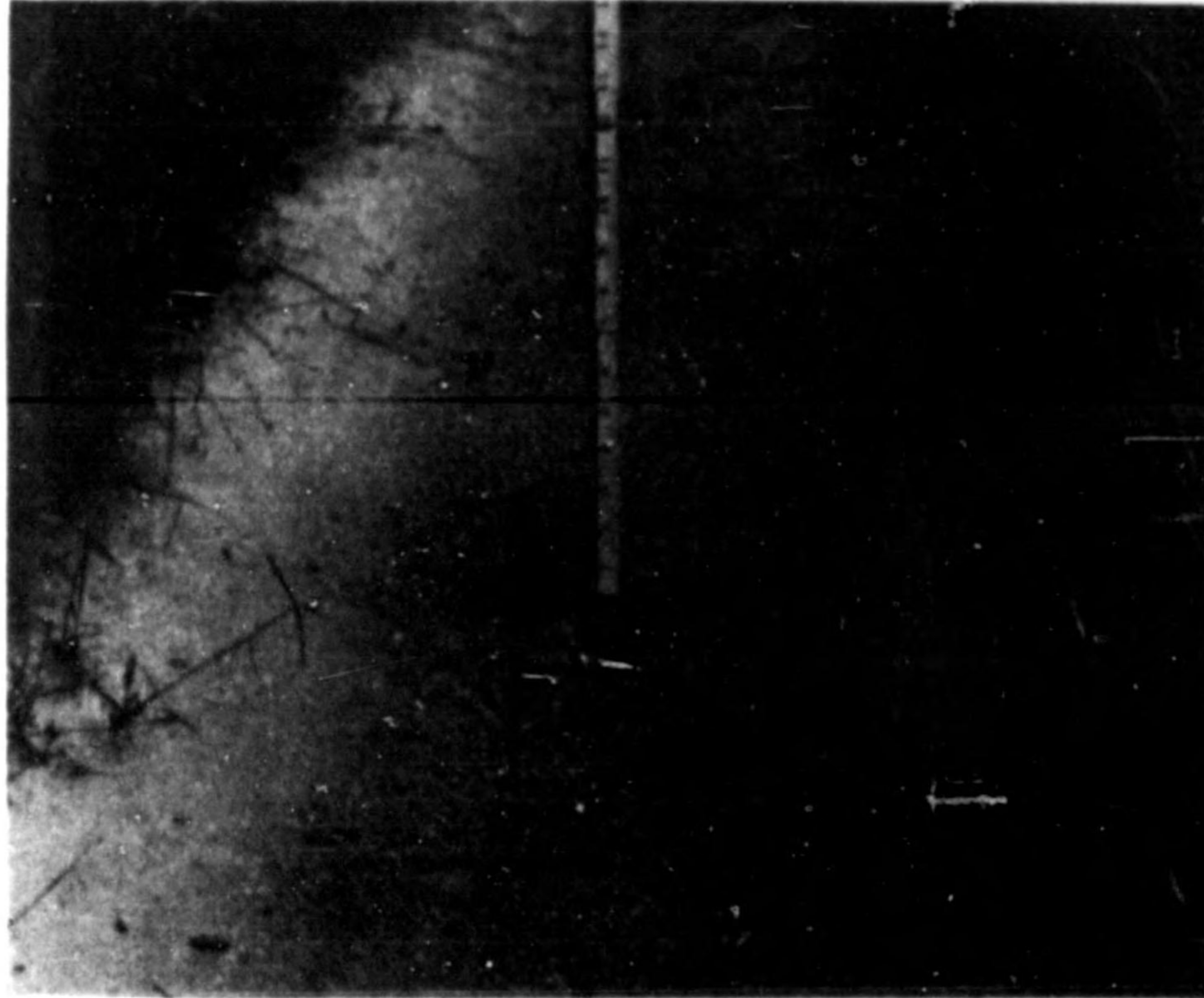


FIGURE 9.—Grade stake pushed above lining by frost action, a distance of 3 inches

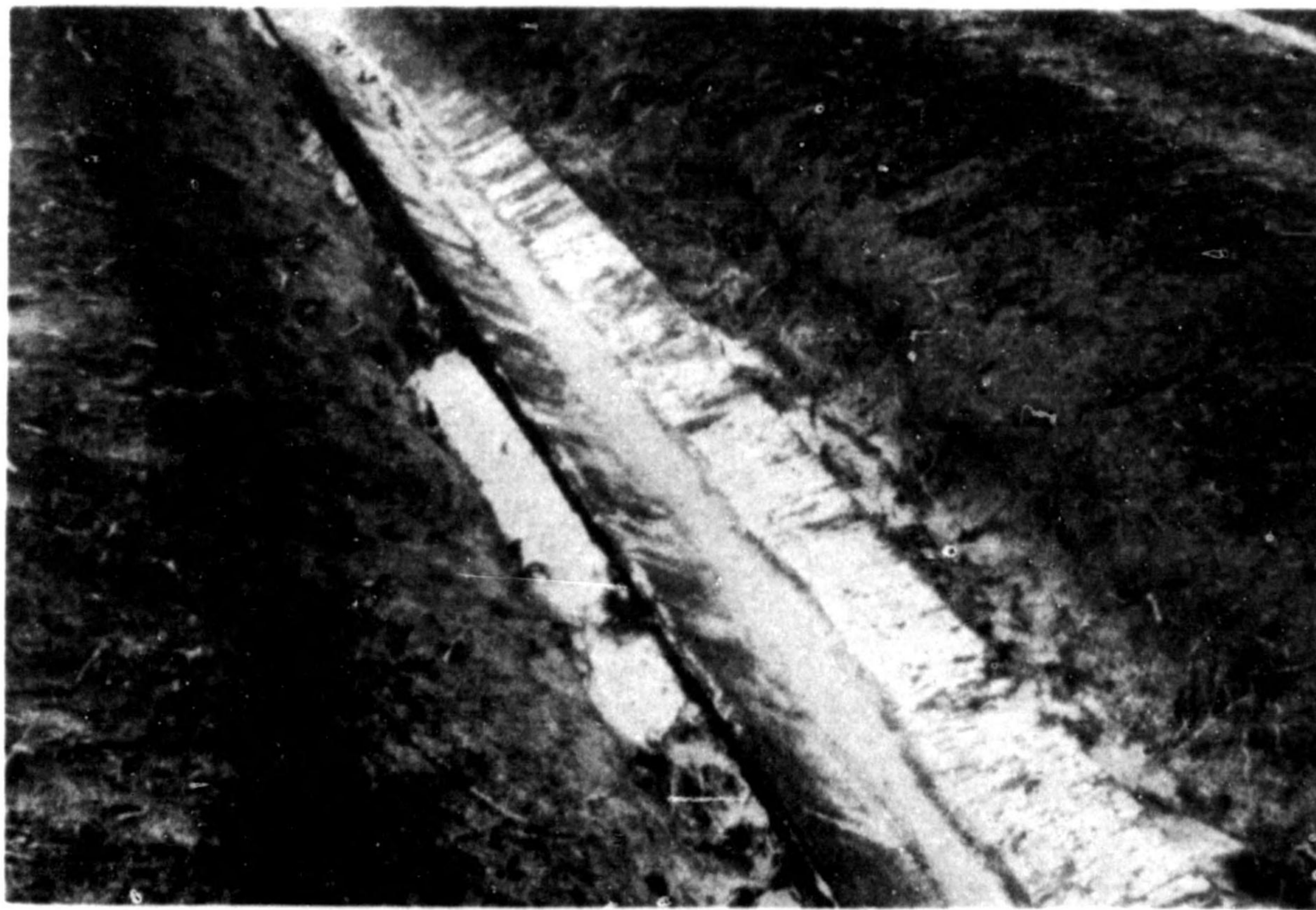


FIGURE 10.—Newly installed monolithic lining intact after being subjected to intense scouring run-off. Note destruction of freshly sodded ditchbanks.

Methods of manufacture of all these slabs were practically the same. Sets of homemade wooden forms and a hand-mixed stiff dry-mix concrete were used. A crew of two men was employed. One man measured the ingredients and mixed the concrete; the other assembled and tamped concrete in the forms. A wetter mix was used for the flat side-slabs than for the curved invert-pieces. The latter were cast in "bottom-side-up" or convex position. Following tamping, the side form-pieces were carefully removed and the section allowed to remain on the supporting form. When casting overlapping joint third round sections, the above procedures were modified in an attempt to lower costs by reducing labor required for tamping. In this case forms were constructed to cast these sections in "right-side-up" or concave position; at the same time wetness of the mix was increased. However, no great reduction in costs resulted as the labor required to place a wet mix in position or tamp a dry one by these methods was almost the same.

All slabs were cured by covering with wet bagging and kept damp by hand sprinkling for a period of 7 days. Costs of these sections are shown in table 6.

TABLE 6.—Cost of precast slab concrete ditch lining ¹

Type	Thickness, inches	Mix	Casting per square foot		Placing per square foot, labor ²	Total cost per square foot
			Labor	Material		
T. & G. Interlocking.....	2	1:3:1	\$0.0207	\$0.0332	\$0.0017	\$0.0557
T. & G. Interlocking.....	2	1:4:2	.0239	.0274	.0027	.0540
Third round.....	2	1:4:4	.0384	.0408	(3)	\$.0792
Interlocking.....	2	1:3:2	.0435	.0374	(3)	\$.0809
Interlocking.....	2	1:4:4	.0480	.0363	(3)	\$.0843
Interlocking.....	2	1:3:2	.0413	.0387	(3)	\$.0800

¹ Average of linings installed under conditions listed in headings.
² Haulage, a factor variable with distance, not included in placing charge.
³ Not yet placed.
⁴ Not placed.

Precast slab concrete linings installed have functioned with a minimum of failures. Some breakage of slabs was experienced during handling attendant to installation; however, these sections were installed and grouted in place. One disadvantage is that vegetation grows between the joints of butt joint slabs (figs. 11 and 12).

Comparable growths have not been observed in the joints of precast slabs held together by tongue and groove, interlocking, or overlapping joints. While it is true that the experimental linings of these latter types are installed in situations generally less favorable to vegetation growth, indications are that objectionable growth would not have occurred to any great extent.

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BRICK

The method employed for the installation of brick and brickbat linings consisted in stretching a cord along the ditch center line from grade stake to grade stake, set at 5-, 10-, or 25-foot centers. Bricks were laid parallel to the center line and spaced about $\frac{3}{8}$ -inch apart. A well-mixed dry mortar, 1:3 to 1:4, was broomed into the space between the bricks. Water was then applied with a hand sprinkler until brick and mortar were water-satisfied. The cost of brick lining is given in table 7.

TABLE 7.—Cost brick ditch lining¹

Mortar mix	Method placing	Cost per square foot		
		Material ²	Labor	Total
1:3	Dry	\$0.0079	\$0.0097	\$0.0176
1:3.25	do	.0039	.0056	.0095
1:3.5	do	.0088	.0115	.0203
1:4	do	.0074	.0089	.0163
1:4.5	do	.0133	.0083	.0216
1:3	Wet	.0391	.0079	.0470
1:4	do	.0034	.0117	.0201
1:4.5	do	.0140	.0081	.0221
1:6	do	.0122	.0073	.0195

¹ Average of linings installed under conditions listed.
² Material, cement and sand. Brick obtained without cost.

One of the most important failures observed in the construction of brick linings is failure to secure initial bond. This can be caused by insufficient spacing between the brick and consequently a lack of mortar to furnish bonding. This failure can be prevented if good workmanship is observed. The face of the bricks themselves may be dirty or covered with small vegetable growths which prevent the mortar from adhering and bonding to the brick surface. This failure can be overcome by assuring that the surfaces of the bricks are clean. Lack of initial bond leads to later loosening of brick and to possible washouts of the lining.

In some instances, growth of vegetation through a mortar of 1:4 has occurred in sufficient amount to retard flow and permit silting. Vegetation growth has not been observed through mortar mixes of 1:3.

That only hard durable brick should be used is demonstrated by the disintegration of soft or "salmon" brick, with subsequent formation of holes in the lining. Soft brick should not be incorporated in the lining (fig. 13).

Brick linings are vulnerable to hydrostatic pressure unless sufficient weep holes are provided. This is demonstrated by one instance of almost complete failure of an entire brick lining subjected to hydrostatic pressure which was not adequately provided with weep holes.

Care should be exercised to obtain firm compaction of back-filling when brick linings are to be installed. Subsequent settling of the

PLATE VII

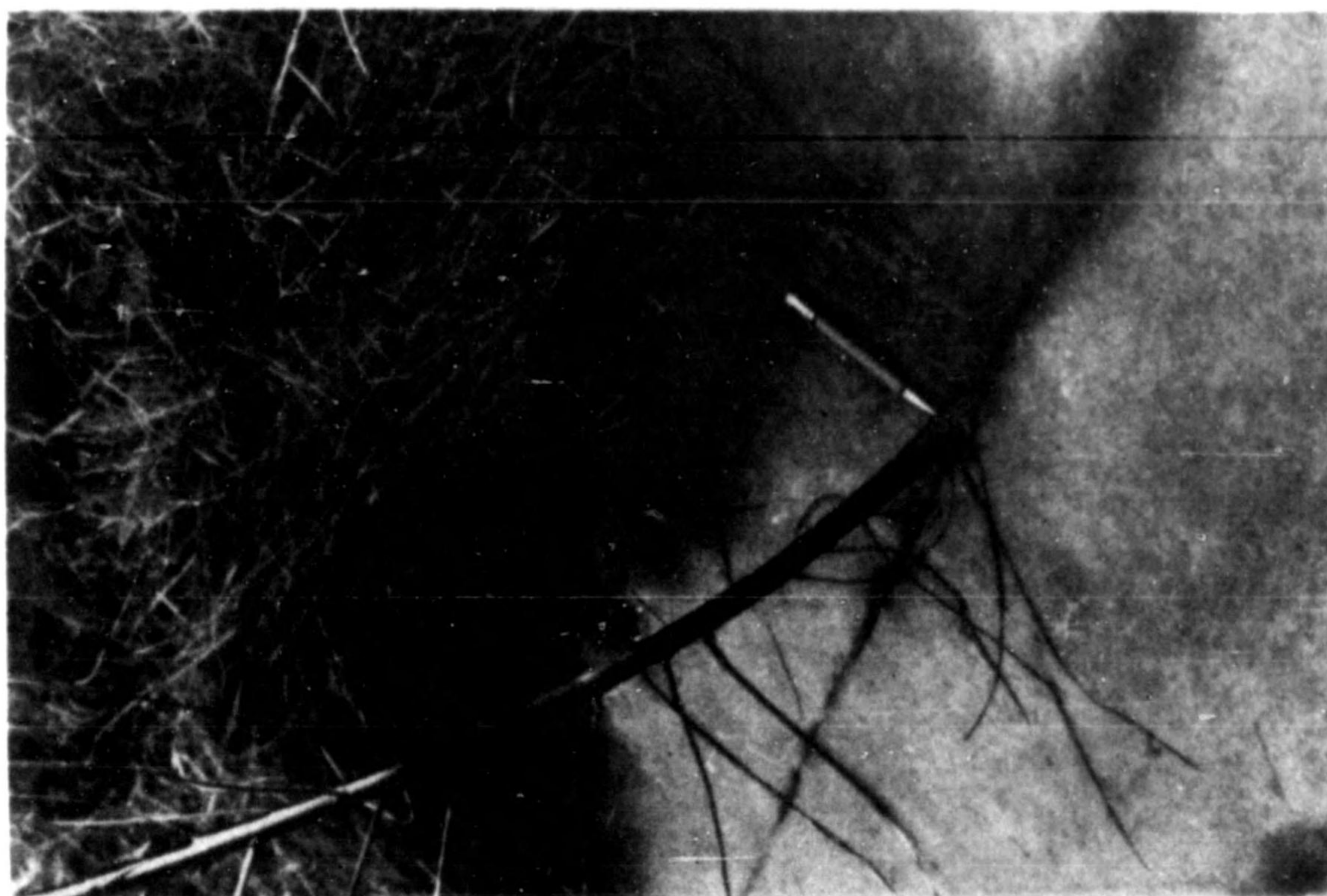


FIGURE 12.—Young willow growing between the joints of butt-joint precast slabs.



FIGURE 11.—Heavy vegetation growth between the joints of butt-joint precast slabs.

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PLATE VIII

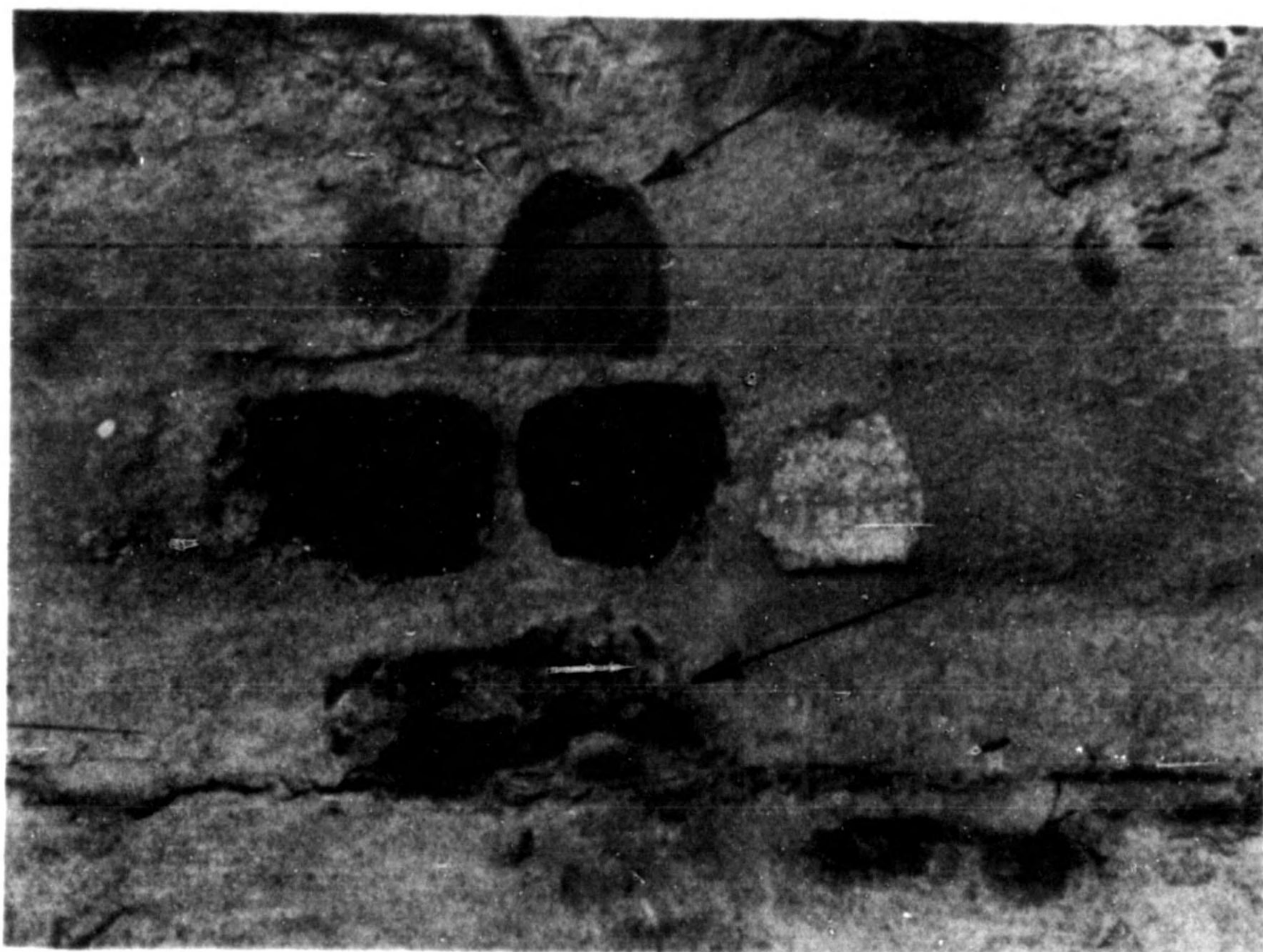


FIGURE 13.—Disintegration of soft or "salmon" brick.

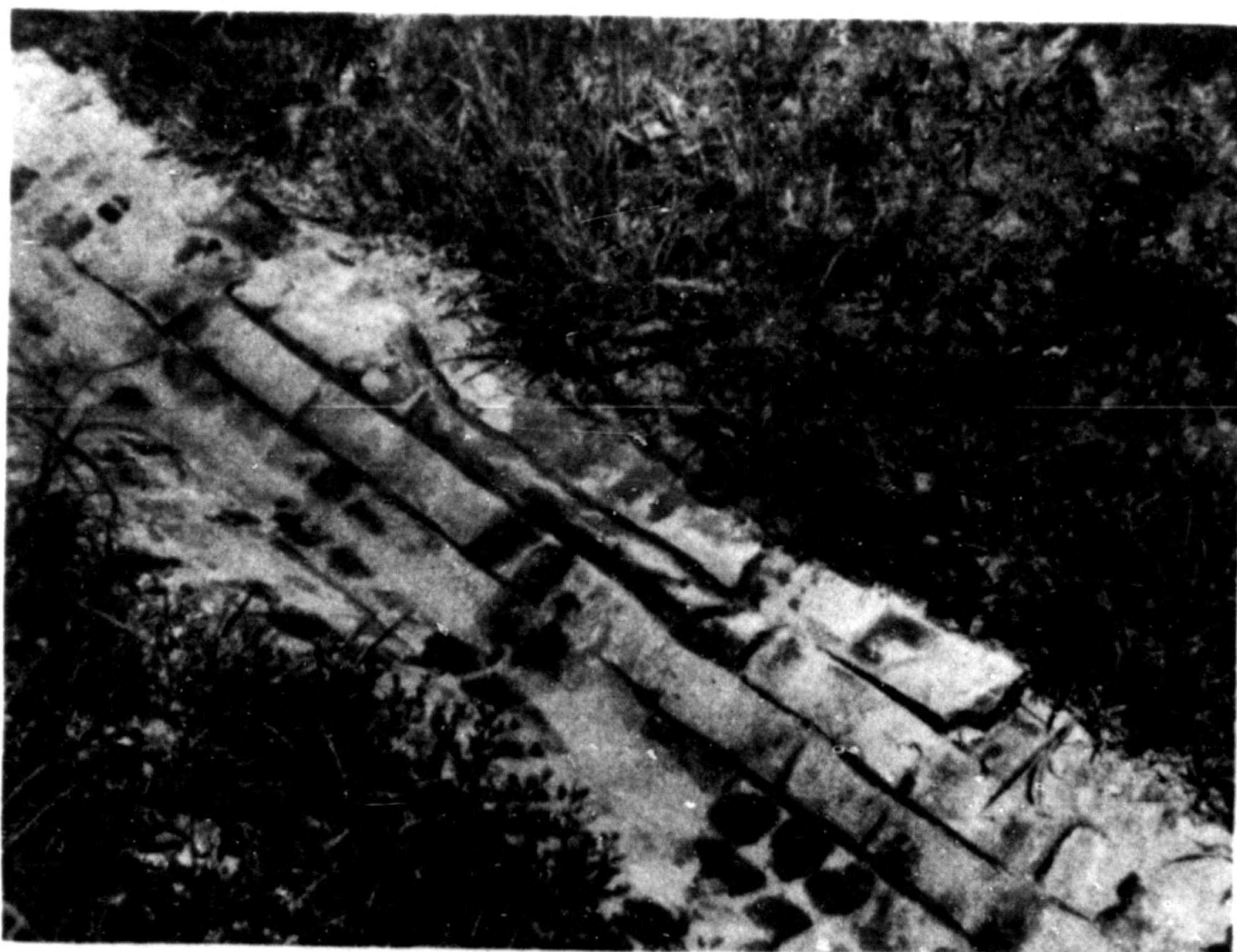


FIGURE 14.—Well-bonded brick broken away from the mother lining. Break was due to settling of backfill

back-fills has caused sections of well-bonded brick to break away and become separated from the mother lining. This has occurred mainly along the edges of the lining (fig. 14).

SODDING

In most cases the ditch banks above the linings were blanket-sodded with Bermuda grass sod. Sod squares 12 x 12 inches were secured to the ditch banks by means of wooden pegs to prevent their washing away by scouring action of water from rains occurring before the sod had time to take root and establish itself. Sod squares of this size can be easily handled. Cost of sodding is shown in table 8.

TABLE 8.—Cost sodding ditch banks¹

Type	Cutting per square foot	Placing per square foot	Total per square foot
Strip.....	\$0.0039	\$0.0025	\$0.0054
Blanket.....	.0024	.0022	.0046

¹ Average of all sod installed on projects. Haulage, a factor variable with distance, not included.

The value of the stabilization of ditch banks cannot be over-emphasized. It is considered that a large part of the efficiency of the experimentally lined ditches can be assigned to the stabilization of the banks by means of vegetation. This subject is of such importance that it warrants exhaustive investigation.

Naturally a study such as has been described emphasizes imperfections; however, it should be pointed out that the poorest of the ditch linings are rendering acceptable service and apparently will continue to do so for a considerable period of time.

Some small amount of experimental work was done with bituminous materials, but no satisfactory method was worked out. Additional research is needed in this direction.

REFERENCES

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- (2) Bennett, Allen, Davis, and Watkins: Soil Survey of Shelby County, Tennessee (1916). Bureau of Soils, U. S. Department of Agriculture.
- (3) What old concrete roads tell us; Highway planning and design series, No. 4, Portland Cement Association.
- (4) Precast concrete units for ditch linings; No. C P 40, Concrete Information, Portland Cement Association.
- (5) Elmendorf and Lee: Concrete invert and tile manufacture by the Malaria Division of the Escambia County Health Department, Pensacola, Florida. Supplement to the Symposium on Malaria appearing in the July and August, 1939, issues of the Southern Medical Journal.

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DEATHS DURING WEEK ENDED MARCH 14, 1942

[From the Weekly Mortality Index, issued by the Bureau of the Census, Department of Commerce]

	Week ended Mar. 14, 1942	Correspond- ing week, 1941
Data from 86 large cities of the United States:		
Total deaths.....	9,381	8,988
Average for 3 prior years.....	9,093	
Total deaths, first 10 weeks of year.....	91,852	95,433
Deaths per 1,000 population, first 10 weeks of year, annual rate.....	13.0	13.5
Deaths under 1 year of age.....	544	513
Average for 3 prior years.....	490	
Deaths under 1 year of age, first 10 weeks of year.....	5,625	5,369
Data from industrial insurance companies:		
Policies in force.....	64,963,934	64,649,882
Number of death claims.....	13,506	12,836
Death claims per 1,000 policies in force, annual rate.....	10.8	10.4
Death claims per 1,000 policies, first 10 weeks of year, annual rate.....	10.2	11.1

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

REPORTS FROM STATES FOR WEEK ENDED MARCH 21, 1942

Summary

Meningococcus meningitis is the only one of the important communicable diseases for which the current incidence is above that for the corresponding week of each year since 1937. A total of 91 cases was reported, as compared with 88 last week and a 5-year (1937-41) median of 54 cases. For the corresponding week in 1937, however, a total of 215 cases was reported. During the current week, New York reported 22 cases, Texas 10, Maryland 9, and Connecticut, New Jersey, Illinois, and Virginia 5 each. A total of 752 cases has been reported to date this year, as compared with 537 last year and a 5-year cumulative median of 587.

The number of cases of poliomyelitis dropped from 18 to 16. The 5-year median for the week is 22. Influenza declined (4,508 cases as compared with 5,101 last week and 5-year median of 7,037), while measles increased slightly. The current and cumulative figures to date for measles are both above the 5-year median. The current incidence, however, is only about 50 percent of that for the corresponding week last year.

The incidence of smallpox increased from 16 to 40 cases (14 in Texas, 10 in Missouri), slightly above last year's record low for the week (36 cases).

Other reports for the week include 2 cases of anthrax in Pennsylvania, 11 cases of amebic dysentery (5 in Texas), 70 cases of bacillary dysentery (42 in Texas, 11 in Georgia), 34 cases of unspecified dysentery (19 in Arizona, 14 in Virginia), 63 cases of typhoid fever (below the incidence for the corresponding week in any prior year), 13 cases of tularemia, and 35 cases of endemic typhus fever.

The crude death rate for the current week for 88 large cities in the United States is 12.4 per 1,000 population, as compared with 13.2 for the preceding week and 12.7 for the 3-year (1939-41) average.

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Telegraphic morbidity reports from State health officers for the week ended March 21, 1942, and comparison with corresponding week of 1941 and 5-year median

In these tables a zero indicates a definite report, while leaders imply that, although none were reported, cases may have occurred.

Division and State	Diphtheria			Influenza			Measles			Meningitis, meningococcus		
	Week ended		Median 1937-41	Week ended		Median 1937-41	Week ended		Median 1937-41	Week ended		Median 1937-41
	Mar. 21, 1942	Mar. 22, 1941		Mar. 21, 1942	Mar. 22, 1941		Mar. 21, 1942	Mar. 22, 1941		Mar. 21, 1942	Mar. 22, 1941	
NEW ENG.												
Maine	1	0	0	3	4	173	118	118	4	0	0	
New Hampshire	0	0	0	3	4	10	89	50	0	0	0	
Vermont	0	0	0	0	0	15	13	13	0	0	0	
Massachusetts	1	1	3	0	0	820	700	700	3	4	2	
Rhode Island	1	0	0	1	0	171	2	9	0	0	0	
Connecticut	0	0	4	2	6	413	94	94	5	0	0	
MID. ATL.												
New York	26	19	28	111	132	683	7,892	1,468	22	3	3	
New Jersey	4	10	10	16	29	443	2,772	1,401	5	2	1	
Pennsylvania	18	21	34	0	0	1,087	5,149	322	2	4	5	
E. NO. CEN.												
Ohio	7	6	20	22	68	196	7,691	252	1	1	1	
Indiana	7	26	12	57	38	125	1,156	60	0	5	3	
Illinois	20	17	23	41	53	645	4,159	104	5	1	2	
Michigan	7	1	8	4	19	246	3,275	289	1	0	0	
Wisconsin	2	0	1	38	184	871	1,058	1,058	0	0	1	
W. NO. CEN.												
Minnesota	3	0	2	5	3	947	12	62	1	0	0	
Iowa	1	3	3	4	161	402	198	147	0	0	0	
Missouri	2	9	9	1	201	325	384	22	0	3	1	
North Dakota	1	0	2	0	8	64	27	27	0	0	0	
South Dakota	3	0	0	1	2	4	3	2	0	0	0	
Nebraska	4	2	2	11	11	304	9	15	0	0	0	
Kansas	3	3	3	9	5	415	1,012	537	1	1	0	
SO. ATL.												
Delaware	1	0	0	0	0	8	392	32	0	0	0	
Maryland	10	8	8	5	32	890	196	196	9	1	1	
Dist. of Col.	0	2	7	5	2	83	287	39	1	1	1	
Virginia	10	2	20	382	553	290	1,896	376	5	0	2	
West Virginia	2	8	8	257	49	148	552	20	0	1	2	
North Carolina	10	15	13	28	73	1,362	1,085	1,085	2	1	1	
South Carolina	1	1	5	505	666	257	293	41	0	0	0	
Georgia	4	8	8	119	226	450	396	205	0	2	2	
Florida	3	5	8	20	149	185	1,066	178	2	1	1	
E. SO. CEN.												
Kentucky	5	3	7	6	90	91	1,111	137	2	3	5	
Tennessee	6	2	8	71	267	140	337	165	2	3	5	
Alabama	7	6	6	440	551	349	731	190	0	1	7	
Mississippi	12	3	4	0	0	0	0	0	1	1	1	
W. SO. CEN.												
Arkansas	5	6	6	226	247	235	240	39	0	0	0	
Louisiana	7	3	12	5	7	188	120	21	1	3	2	
Oklahoma	11	5	6	213	250	376	55	55	0	1	1	
Texas	50	40	35	1,228	2,598	1,677	2,363	1,250	476	10	1	
MOUNTAIN												
Montana	3	2	2	33	2	87	9	18	0	0	0	
Idaho	2	0	0	0	2	81	18	18	0	0	0	
Wyoming	0	1	1	192	3	95	61	61	0	0	0	
Colorado	8	5	9	74	18	247	266	253	0	0	0	
New Mexico	2	1	1	5	15	66	143	70	0	1	1	
Arizona	0	2	2	209	173	365	0	26	1	0	0	
Utah	0	1	1	5	22	155	13	105	0	1	0	
Nevada	0	0	0	3	6	4	10	0	0	0	0	
PACIFIC												
Washington	2	5	2	9	8	322	89	89	1	1	1	
Oregon	4	3	3	28	26	167	545	45	2	0	0	
California	17	16	25	217	152	5,148	473	473	2	5	3	
Total	293	271	450	4,508	7,037	7,037	22,521	47,447	9,246	91	52	
11 weeks	3,542	3,308	5,828	54,130	453,985	144,942	158,613	263,427	136,721	752	557	

See footnotes at end of table.

Telegraphic morbidity reports from State health officers for the week ended March 21, 1942, and comparison with corresponding week of 1941 and 5-year median—Con.

Division and State	Polio-myelitis			Scarlet fever			Smallpox			Typhoid and para-typhoid fever		
	Week ended		Me-dian 1937-41	Week ended		Me-dian 1937-41	Week ended		Me-dian 1937-41	Week ended		Me-dian 1937-41
	Mar. 21, 1942	Mar. 22, 1941		Mar. 21, 1942	Mar. 22, 1941		Mar. 21, 1942	Mar. 22, 1941		Mar. 21, 1942	Mar. 22, 1941	
NEW ENG.												
Maine.....	0	0	0	11	11	17	0	0	0	0	0	0
New Hampshire.....	0	0	0	12	2	2	0	0	0	0	1	0
Vermont.....	0	0	0	11	7	7	0	0	0	0	1	0
Massachusetts.....	1	1	0	340	153	169	0	0	0	1	0	0
Rhode Island.....	0	0	0	8	9	11	0	0	0	0	1	0
Connecticut.....	1	0	0	44	81	91	0	0	0	0	0	0
MID. ATL.												
New York.....	0	0	0	548	553	1,017	0	0	0	3	1	3
New Jersey.....	0	0	0	197	381	239	0	0	0	0	0	1
Pennsylvania.....	0	0	0	572	371	436	0	0	0	8	5	5
E. NO. CEN.												
Ohio.....	0	0	1	374	319	317	0	1	5	2	3	3
Indiana.....	2	0	1	153	186	196	0	0	6	0	3	1
Illinois.....	1	0	0	209	520	601	2	7	10	1	1	4
Michigan ²	0	0	0	259	155	442	2	2	2	1	2	4
Wisconsin.....	1	0	0	191	144	172	0	1	4	0	0	1
W. NO. CEN.												
Minnesota.....	0	1	0	113	47	105	2	3	9	0	0	0
Iowa.....	0	0	0	47	69	157	0	4	23	1	1	1
Missouri.....	1	0	0	76	228	228	10	6	8	1	2	2
North Dakota.....	1	3	0	32	3	28	0	2	3	0	0	0
South Dakota.....	0	1	0	39	24	18	0	0	4	0	0	0
Nebraska.....	1	0	0	50	27	27	1	0	8	0	0	0
Kansas.....	0	0	0	125	55	130	1	0	5	0	1	1
SO. ATL.												
Delaware.....	0	0	0	51	14	14	0	0	0	0	0	0
Maryland ²	0	0	0	85	55	47	0	0	0	1	0	1
Dist. of Col.....	0	0	0	16	23	20	0	0	0	0	1	7
Virginia.....	0	0	1	28	43	40	0	0	0	2	3	3
West Virginia.....	1	0	0	41	42	46	0	0	0	2	3	3
North Carolina.....	0	0	0	45	25	40	0	0	1	1	0	1
South Carolina.....	0	0	0	5	8	4	0	1	0	0	3	1
Georgia.....	0	0	0	20	15	15	0	0	0	4	3	3
Florida.....	0	6	0	4	8	10	0	0	0	3	6	3
E. SO. CEN.												
Kentucky.....	0	2	0	135	133	100	0	0	0	5	1	4
Tennessee.....	0	0	0	75	105	59	2	1	0	2	1	2
Alabama.....	1	1	0	29	16	14	2	1	0	1	2	2
Mississippi ²	0	0	0	29	2	3	0	0	0	1	2	2
W. SO. CEN.												
Arkansas.....	0	0	0	6	6	10	4	0	2	2	3	3
Louisiana.....	2	0	0	4	8	11	0	0	2	3	0	4
Oklahoma.....	0	2	1	21	30	27	0	0	14	1	5	1
Texas.....	0	1	1	50	59	71	14	0	6	4	8	14
MOUNTAIN												
Montana.....	0	3	0	23	22	22	0	0	2	0	0	0
Idaho.....	1	0	0	6	5	21	0	1	2	0	0	0
Wyoming.....	0	0	0	27	9	9	0	1	0	0	1	0
Colorado.....	0	0	0	42	46	51	0	0	4	0	6	1
New Mexico.....	0	0	0	2	6	22	0	0	6	0	4	2
Arizona.....	0	0	0	6	5	7	0	0	0	1	1	1
Utah ²	0	0	0	32	22	29	0	0	0	0	0	0
Nevada.....	0	0	0	0	0	0	0	0	0	0	0	0
PACIFIC												
Washington.....	0	0	0	37	34	46	0	5	6	2	3	2
Oregon.....	0	1	1	10	6	39	0	0	18	3	1	1
California.....	2	2	2	136	177	236	0	0	18	7	3	3
Total.....	16	24	22	4,426	4,269	5,029	40	36	327	63	82	101
11 weeks.....	266	274	238	44,084	40,114	58,995	271	880	3,297	842	827	1,213

See footnotes at end of table.

March 27, 1942

Telegraphic morbidity reports from State health officers for the week ended March 21, 1942, and comparison with corresponding week of 1941 and 5-year median—Con.

Division and State	Whooping cough		Week ended Mar. 21, 1942								
	Week ended		Anthrax	Dysentery			Encephalitis	Leprosy	Rocky Mt. spotted fever	Tularaemia	Typhus fever
	Mar. 21, 1942	Mar. 22, 1941		Amebic	Bacillary	Unspecified					
NEW ENG.											
Maine	16	36	0	0	0	0	0	0	0	0	0
New Hampshire	6	3									
Vermont	43	5	0	0	0	0	2	0	0	0	0
Massachusetts	269	189	0	0	0	0	0	0	0	0	0
Rhode Island	38	14	0	0	0	0	0	0	0	0	0
Connecticut	86	59	0	0	1	0	0	0	0	0	0
MID. ATL.											
New York	527	294	0	2	9	0	0	0	0	0	0
New Jersey	268	93	0	1	0	0	0	0	0	0	0
Pennsylvania	220	373	2	0	0	0	0	0	0	2	0
E. NO. CEN.											
Ohio	116	307	0	0	0	0	0	0	0	0	0
Indiana	45	37	0	0	0	0	0	0	0	0	0
Illinois	124	86	0	1	0	0	0	0	0	1	0
Michigan ¹	147	199	0	0	1	0	0	0	0	0	0
Wisconsin	182	101	0	0	0	0	0	0	0	0	0
W. NO. CEN.											
Minnesota	25	74	0								0
Iowa	15	64	0								0
Missouri	9	90	0								0
North Dakota	1	17	0								0
South Dakota	2	10	0								0
Nebraska	7	32	0								0
Kansas	42	136	0								0
SO. ATL.											
Delaware	0	6	0								0
Maryland ²	35	94	0	0	0	0	0	0	0	1	0
Dist. of Col.	15	7	0								0
Virginia	38	98	0	0	0	14	0	0	0	0	0
West Virginia	25	64	0								0
North Carolina	127	271	0	0	0	0	0	0	0	0	1
South Carolina	57	116	0	0	0	0	0	0	0	1	0
Georgia	32	18	0	1	11	0	0	0	0	4	8
Florida	37	15	0	0	0	0	0	0	0	0	5
E. SO. CEN.											
Kentucky	82	74	0								0
Tennessee	33	30	0	0	0	1	0	0	0	0	0
Alabama	23	37	0							1	3
Mississippi ³			0							1	1
W. SO. CEN.											
Arkansas	10	20	0	0	0	0	0	0	0	0	0
Louisiana	19	13	0	1	0	0	1	1	0	0	3
Oklahoma	15	45	0	0	0	0	0	0	0	0	0
Texas	117	269	0	5	42	0	0	0	0	1	14
MOUNTAIN											
Montana	10	31	0	0	0	0	1	0	0	0	0
Idaho	2	9	0	0	0	0	0	0	0	0	0
Wyoming	10	0	0	0	0	0	0	0	0	0	0
Colorado	36	85	0	0	0	0	0	0	0	0	0
New Mexico	9	15	0	0	0	0	0	0	0	0	0
Arizona	81	42	0	0	0	19	0	0	0	0	0
Utah ²	87	86	0	0	0	0	0	0	0	0	0
Nevada	3	0	0	0	0	0	0	0	0	0	0
PACIFIC											
Washington	115	93	0	0	0	0	0	0	0	0	0
Oregon	39	18	0	0	0	0	0	0	0	0	0
California	286	465	0	0	6	0	3	0	0	0	0
Total	3,531	4,240	2	11	70	34	7	1	0	13	35
11 weeks	43,609	47,732									

¹ New York City only.
² Period ended earlier than Saturday.
³ Correction, week ended Mar. 7, 1942: Montana, 90 cases.

CONSOLIDATED MONTHLY STATE MORBIDITY REPORTS FOR OCTOBER, NOVEMBER, AND DECEMBER, 1941

	Actino- mycosis	Chick- enpox	Diph- theria	Dysen- tery, amebic	Dysen- tery, bacil- lary	Dysen- tery, unde- fined	En- ceph- alitis, infec- tious	Ger- man measles	Hook- worm disease	Infl- uenza	Malaria	Measles	Menin- gitis, menin- gococ- cus	Mumps	Oph- thalmia neona- torum	Pellagra	Pneu- monia, all forms	Polio- myeli- tis
NEW ENG.																		
Maine.....		677	1				1	351		2	1	1,796	4	834	1		107	18
New Hampshire.....		109	4					1		3		77		92			4	16
Vermont.....		416	16					20				23		321			3	8
Massachusetts.....	3	3,345	44		105		6	162				1,508	30	2,487	82	5	1,593	62
Rhode Island.....		192	48		1			12		1	1	398		107			58	11
Connecticut.....	1	1,304	4	1	73		1	47		21	4	624	10	886			456	35
MID. ATL.																		
New York.....		4,910	144	25	406		22	329			23	2,287	45		26		4,880	435
New Jersey.....		3,402	66	6	6		5	191		123	3	359	13	861	19		875	109
Pennsylvania.....		6,274	157	6	19		12				2	5,041	47	3,367			1,159	198
E. NO. CEN.																		
Ohio.....		5,642	237	2	30		3	50		134	6	555	8	712	35		867	130
Indiana.....		675	195	1	1		1	7		331	11	165	8	62			181	27
Illinois.....	2	3,254	324	23	75		14	114		133	35	460	20	1,673	9	5	2,709	132
Michigan.....	2	5,583	108	13	119		4	645		14	8	722	14				858	85
Wisconsin.....		6,274	20	2			9			263		1,542	11	4,857			156	44
W. NO. CEN.																		
Minnesota.....	5	2,262	33	10	4		19		1	21		495	4				213	92
Iowa.....	1	782	46		1		13	8		24	2	459	4	609			353	13
Missouri.....		417	100			29				68	7	118	8	140		1	422	12
North Dakota.....	1	600	19				19	34		75		803	1	33			305	10
South Dakota.....		204	54				3			1		25	3	358			49	7
Nebraska.....		242	41				1	4		2		61		47			7	1
Kansas.....		2,325	55		3		13	23		110	7	831	8	972		1	412	16

¹ Lobar pneumonia only.

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CONSOLIDATED MONTHLY STATE MORBIDITY REPORTS FOR OCTOBER, NOVEMBER, AND DECEMBER, 1941

CONSOLIDATED MONTHLY STATE MORBIDITY REPORTS FOR OCTOBER, NOVEMBER, AND DECEMBER, 1941—Con.

March 27, 1942

	Actino- mycosis	Chick- enpox	Diph- theria	Dysen- tery, amebic	Dysen- tery, bacil- lary	Dysen- tery, unde- fined	En- ceph- litis, infec- tious	Ger- man measles	Hook- worm disease	Influ- enza	Malaria	Measles	Menin- gitis, menin- gococ- cus	Mumps	Oph- thalmia neona- torum	Pellagra	Pneu- monia, all forms	Polio- myeli- tis
SO. ATL.																		
Delaware.....		223	15	1						5		20		41		1	5	16
Maryland.....		551	159	6	62	33	2	85		61	14	892	23	263	3		605	48
District of Columbia.....		157	19	1	1					11		37	3	8		1	159	26
Virginia.....		547	443	1	1,448					2,188	26	979	11	92		9	596	70
West Virginia.....		345	120		31	1				157	2	1,470	7	582			38	18
North Carolina.....		1,084	978		1			33		67	27	2,445	10			7	32	42
South Carolina.....		100	801	5			7	73	390	3,491	2,594	327	6	139	11	199	880	39
Georgia.....		156	382	8	32	8	9		1,674	464	225	328	3	112		41	404	57
Florida.....		38	98	9	3			10	2,230	148	37	110	7	96	3	3	225	30
E. SO. CEN.																		
Kentucky.....		789	152		44		2			41	3	486	18	177			186	46
Tennessee.....		371	247	8	70			19	13	318	117	443	14	89	2	22	536	209
Alabama.....		193	391	2			4	5		655	1,634	325	8	137	3	55	455	140
Mississippi.....		903	207	383	1,392				1,456	13,361	6,824	1,724	10	1,484	25	704	3,427	29
W. SO. CEN.																		
Arkansas.....		139	277	8	20			11	28	914	658	489	4	167	2	62	266	24
Louisiana.....		60	122	7	5		1		191	130	88	31	13	52	6	6	282	17
Oklahoma.....		166	203	5	54		3		6	1,128	513	343	3	108		15	327	23
Texas.....		1,194	897	64	594		19			12,651	1,759	1,488	15	1,413	19	321	1,626	43
MOUNTAIN																		
Montana.....		894	30	1			2	25		67		342	3	302			32	11
Idaho.....		248	13					11		12		87		103			5	4
Wyoming.....		335	15				2	4		68		39	3	45			44	4
Colorado.....		453	159		4		4			412		1,289	1	94			250	7
New Mexico.....		170	16	5	21		1	43		18	7	201	2	153		1	203	1
Arizona.....		295	36			306	6	145		1,241	21	622		456	2	40	332	4
Utah.....		2,327	2				1	132		90		287	2	971			97	14
Nevada.....		54	2									8		125			36	

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PACIFIC																		
Washington		2,637	9		5		4	150		65	2	109	4	2,430		116	29	
Oregon		673	42	3			1			182	6	462	1	660		228	32	
California	1	7,294	247	38	100		28	1,218		1,015	29	5,469	16	10,071	7	1,794	65	
Total	16	71,285	7,798	641	4,730	376	243	3,962	5,989	40,316	14,696	39,231	431	38,788	255	1,500	26,853	2,508
Fourth quarter 1940	13	78,491	5,601	603	2,598	388	141	1,958	6,105	178,440	13,638	48,035	347	23,923	141	1,706	31,301	3,219
Median, (4th qr.) 1936-40		67,016	11,000				222		7,515	31,594	17,580	38,721	494	21,855	494	1,699	28,100	1,833
Total 1941	50	299,985	17,939	3,175	24,281	1,461	3,045	160,362	26,093	685,226	67,225	891,051	1,984	198,264	810	7,725	142,293	8,947
Total 1940	37	279,159	16,252	2,991	19,152	1,484	911	9,682	35,536	423,072	77,553	286,791	1,631	117,663	1,038	8,688	141,939	9,781
Median, 1936-1940		272,472	28,551				911		30,940	277,826	82,123	297,378	2,638	145,620	2,142	9,301	127,933	7,281
Alaska		152	8					124		224		20		157			38	
Hawaii Territory		56	29	6	13		2	11	4	46	1	287	1	25			46	27

1 Lobar pneumonia only.

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March 27, 1942

CONSOLIDATED MONTHLY STATE RESPONSIBILITY REPORTS FOR OCTOBER, NOVEMBER AND DECEMBER 1941

CONSOLIDATED MONTHLY STATE MORBIDITY REPORTS FOR OCTOBER, NOVEMBER, AND DECEMBER, 1941—Con.

March 27, 1942

	Puerperal septicemia	Rabies in animals	Rabies in man	Rocky Mountain spotted fever	Scarlet fever	Septic sore throat	Small- pox	Teta- nus	Tra- choma	Trichi- nosis	Tuber- culosis, respiratory	Tuber- culosis, all forms	Tula- remia	Ty- phoid and para- typhoid fever	Typhus fever	Undu- lant fever	Vin- cent's in- fec- tion	Whoop- ing cough
NEW ENG.																		
Maine				0	169	1	0				85	97		12		5	13	297
New Hampshire				0	125	2	0					24		2		11		182
Vermont				0	54	1	0				14	35		1		11	7	226
Massachusetts		5		0	2,373	35	0	6	5	16	793	882	1	36		14		2,093
Rhode Island				0	115	11	0				84	503		4		2		592
Connecticut				0	262	25	0			2	338	352	2	9		29		695
MID. ATL.																		
New York		10		2	2,666	223	0	19		39	3,021	3,266	1	112	12	60	199	6,141
New Jersey		66		0	1,062	15	0	3		12		727	1	28	1	16		2,381
Pennsylvania	1			1	2,226		0		3			529	21	125	3	9		2,916
E. NO. CEN.																		
Ohio			1	1	2,529	13	3	1	2	1	1,116	1,189	189	123		37		2,607
Indiana				0	931		15		1		284	286	73	27		8	1	273
Illinois		97	1	4	2,062	36	2	14	30	2	2,164	2,367	59	49		48	44	2,799
Michigan		7		0	2,003	421	13	8		3		1,522	37	66	2	48	48	4,286
Wisconsin				0	1,510	19	5					255	19	16		37		3,484
W. NO. CEN.																		
Minnesota				0	749	17	8	3	2			494	2	2		39		711
Iowa		11		0	577	70	11				173	173	9	21		132		253
Missouri				0	687	10	18	1	229			521	16	53		4		236
North Dakota				1	128		3				64	67	2	4		1	18	135
South Dakota				0	279	5	2		12			54		7		1		90
Nebraska				0	217	3	1				5	46		15		2		48
Kansas		7		0	871	5	6	3			116	138	9	12		15	39	721
SO. ATL.																		
Delaware			1	0	193		0				41	41		7				38
Maryland				1	584	59	0	4			681	703	9	81		14	56	455
District of Columbia				0	186		0				376	385		10		2		225
Virginia				2	699	460	0	1	7		708	708	16	162	9	7		655
West Virginia				0	744	18	0				410	410	13	57		4		358
North Carolina				2	1,052	45	0				486	505	5	40	31	2	7	1,440
South Carolina		34		1	161	18	1					112		41	41			513
Georgia	1			0	459	127	3	4			387	387	10	59	395	31		222
Florida				0	73	1	0	4			250			23	45	4	15	157

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E. SO. CEN.																
Kentucky				0	908	33	3			451	408	94	101		2	955
Tennessee	2			1	938	59	5	6	5	4	818	23	98	34	4	417
Alabama		43	1	0	552		1	9			578		33	115	19	186
Mississippi	75			0	288		5		11		298	303	3	20	25	1,711
W. SO. CEN.																
Arkansas	4	72		2	116	143	8	2	122		216	231	19	82	3	183
Louisiana		4		0	96	7	2	8		275	275	7	90	87	23	41
Oklahoma				2	261	116	8	1	493		317	14	37		13	114
Texas		8		0	630		10		32		508	9	148	162	56	1,114
MOUNTAIN																
Montana				1	318	21	1		6		54	1	7			324
Idaho				0	90		1			8	8		3		7	82
Wyoming				9	82	6	0		5		16	19	11		9	97
Colorado				0	274	7	2			253	253	3	32		6	565
New Mexico	3	26	1	0	95	6	1			223	223	1	27		1	235
Arizona				0	51	12	2		228		223		7		2	243
Utah				0	155	16	0			30	32	4	2		4	278
Nevada				0	15		0		1		17		2		1	100
PACIFIC																
Washington		14		0	499	19	3		1		298	336	1	19		1,232
Oregon		4		0	99	8	3		6		163	1	10		5	351
California		143		0	1,553	17	3	21	49	20	2,267	2,379	3	74	13	2,583
Total	86	551	5	30	32,746	2,110	140	119	1,251	100	14,818	24,175	606	2,007	978	46,075
Fourth Quarter 1940	103	643	8	13	31,794	1,945	579	98	1,525	129	13,652	24,053	571	2,139	624	51,065
Median, (4th qr.) 1936-1940	103			14	42,187		1,369			66	12,891	24,053	571	3,184	603	38,393
Total 1941	315	2,494	25	505	128,518	10,345	1,368	426	5,426	464	63,664	106,372	1,482	8,485	2,780	221,500
Total 1940	427	2,761	31	417	155,707	10,198	2,764	412	4,489	521	57,245	103,348	1,611	9,638	1,879	183,273
Median 1936-1940	427			380	183,893		9,738			331	50,406	103,718	1,641	13,767	1,879	183,273
Alaska					4	11					116	126		2		46
Hawaii					4	1		5	1	2	198	212		33	31	134

Anthrax: Massachusetts, 3; New York, 5; New Jersey, 3; Pennsylvania, 15; North Carolina, 1; Florida, 1; Texas, 3; Oregon, 1.
 Botulism: North Dakota, 3; New Mexico, 1; California, 11.
 Dengue: South Carolina, 10; Alabama, 2; Louisiana, 1; Texas, 342; Arizona, 6.
 Diarrhea: Ohio, 275 (under 2 years); Michigan, 3 (infant, diarrhea); Maryland, 123; South Carolina, 1655; New Mexico, 89; Nevada, 6 (infant, diarrhea); Washington, 22 (under 2 years, 20); California, 21 (infant, epidemic).
 Food poisoning: Ohio, 13; Illinois, 14; Kansas, 1; Louisiana, 2; New Mexico, 8; California, 182.
 Granuloma, coccidioides: California, 8.
 Leprosy: Florida, 2; Louisiana, 3; Texas, 6; California, 1; Hawaii Territory, 7.
 Psittacosis: New York, 2; Pennsylvania, 1; California, 1.
 Weil's disease: Michigan, 1; Washington, 14; Hawaii Territory, 4.

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WEEKLY REPORTS FROM CITIES

City reports for week ended March 7, 1942

This table lists the reports from 87 cities of more than 10,000 population distributed throughout the United States, and represents a cross section of the current urban incidence of the diseases included in the table.

	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Polliomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
Atlanta, Ga.....	0	0	6	0	1	0	4	0	4	0	0	0
Baltimore, Md.....	1	0	12	4	317	2	28	0	20	0	1	29
Billings, Mont.....	0	0	0	0	2	0	0	0	1	0	0	0
Birmingham, Ala.....	0	0	17	0	8	0	6	0	3	0	1	2
Boise, Idaho.....	0	0	0	0	0	0	0	0	0	0	0	0
Boston, Mass.....	0	0	0	1	96	0	26	0	86	0	0	43
Bridgeport, Conn.....	0	0	0	0	8	0	2	0	7	0	0	0
Brunswick, Ga.....	0	0	0	0	9	0	0	0	0	0	0	0
Buffalo, N. Y.....	1	0	0	1	6	0	13	0	16	0	0	7
Camden, N. J.....	0	0	1	0	10	0	4	0	17	0	0	0
Charleston, S. C.....	0	0	97	1	0	2	3	0	1	0	0	0
Chicago, Ill.....	6	0	8	3	106	0	35	0	115	0	0	75
Cincinnati, Ohio.....	3	0	0	0	0	0	7	0	24	0	0	13
Cleveland, Ohio.....	1	0	11	0	11	2	6	0	76	0	1	17
Columbus, Ohio.....	1	0	1	1	11	0	5	0	1	0	0	12
Concord, N. H.....	0	0	0	0	0	0	0	0	2	0	0	0
Cumberland, Md.....	0	0	0	0	0	2	0	0	1	0	0	0
Dallas, Tex.....	3	0	1	1	210	0	9	0	1	0	1	3
Denver, Colo.....	5	0	15	0	94	0	3	0	9	0	0	31
Detroit, Mich.....	2	0	1	1	70	0	28	0	151	0	0	33
Duluth, Minn.....	0	0	0	0	0	0	1	0	13	0	0	1
Fall River, Mass.....	1	0	0	3	11	1	1	0	35	0	0	1
Fargo, N. Dak.....	0	0	0	0	1	0	1	0	0	0	0	7
Flint, Mich.....	0	0	0	0	1	0	4	0	4	0	0	3
Fort Wayne, Ind.....	0	0	0	0	1	0	4	0	2	0	1	0
Frederick, Md.....	0	0	0	0	12	0	0	0	0	0	0	0
Galveston, Tex.....	0	0	0	0	0	0	1	0	1	0	1	0
Grand Rapids, Mich.....	0	0	0	1	10	0	2	0	5	0	0	1
Great Falls, Mont.....	0	0	0	0	37	0	2	0	0	0	0	5
Hartford, Conn.....	0	0	0	0	16	1	5	0	3	0	0	2
Helena, Mont.....	0	0	0	0	3	0	1	0	0	0	0	0
Houston, Tex.....	1	0	0	0	52	0	17	0	4	0	1	0
Indianapolis, Ind.....	1	0	0	1	14	0	8	0	23	0	0	9
Kansas City, Mo.....	0	0	1	1	14	0	10	0	34	0	0	1
Kenosha, Wis.....	0	0	0	0	2	0	0	0	2	0	0	4
Little Rock, Ark.....	0	0	13	1	119	0	3	0	0	0	0	0
Los Angeles, Calif.....	8	0	24	0	422	0	13	1	38	0	1	23
Lynchburg, Va.....	0	0	0	0	0	0	0	0	1	0	0	6
Memphis, Tenn.....	0	0	7	5	2	0	4	0	4	1	2	4
Milwaukee, Wis.....	0	0	0	0	41	0	1	0	27	0	0	84
Minneapolis, Minn.....	2	0	0	0	93	0	5	0	28	0	0	9
Missoula, Mont.....	0	0	0	0	0	0	2	0	0	0	0	0
Mobile, Ala.....	1	0	2	0	0	0	1	0	1	0	0	0
Nashville, Tenn.....	0	0	0	2	1	0	5	0	7	0	0	6
Newark, N. J.....	0	0	3	0	37	2	5	0	34	0	0	46
New Haven, Conn.....	0	0	0	0	147	0	0	0	0	0	0	7
New Orleans, La.....	0	0	3	2	21	1	12	1	4	0	0	3
New York, N. Y.....	24	5	17	4	51	4	77	0	263	0	3	224
Omaha, Nebr.....	1	0	0	0	105	0	6	0	3	0	0	0
Philadelphia, Pa.....	1	0	1	5	43	1	30	0	225	0	1	67
Pittsburgh, Pa.....	1	1	4	5	27	2	10	0	19	0	0	9
Portland, Me.....	0	0	0	0	8	0	2	0	1	0	0	0
Providence, R. I.....	0	0	0	0	100	0	4	0	4	0	0	43
Pueblo, Colo.....	0	0	0	1	31	0	2	0	4	0	0	0
Racine, Wis.....	0	0	0	0	10	0	1	0	2	0	0	14
Reading, Pa.....	0	0	0	0	2	0	2	0	0	0	0	8
Richmond, Va.....	0	0	0	0	0	0	0	0	2	0	0	0

City reports for week ended March 7, 1942—Continued

	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Pollomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
Roanoke, Va.	0	0	0	0	1	0	0	0	0	0	0	0
Rochester, N. Y.	0	0	0	0	6	0	1	0	0	0	0	13
Sacramento, Calif.	0	0	0	0	123	1	3	0	12	0	0	0
Saint Joseph, Mo.	0	0	0	0	8	0	2	0	3	0	0	20
Saint Louis, Mo.	0	0	1	2	172	0	14	0	16	0	0	0
Saint Paul, Minn.	2	0	0	0	508	0	2	1	7	0	0	5
Salt Lake City, Utah.	0	0	0	0	6	0	2	0	0	0	0	20
San Antonio, Tex.	0	1	2	0	8	0	9	0	3	0	0	9
San Francisco, Calif.	3	0	0	0	64	1	12	0	3	0	0	6
Savannah, Ga.	0	0	43	2	56	1	1	0	15	0	0	10
Seattle, Wash.	1	0	0	2	1	1	6	0	4	0	0	0
Shreveport, La.	0	0	0	0	10	0	7	0	4	0	0	37
South Bend, Ind.	1	0	0	0	3	0	5	0	2	0	0	0
Spokane, Wash.	0	0	0	0	9	0	3	0	22	0	0	2
Springfield, Ill.	0	0	0	0	93	1	1	0	1	0	0	4
Springfield, Mass.	0	0	0	0	12	0	5	0	5	0	0	2
Superior, Wis.	0	0	0	0	0	0	0	0	10	0	0	14
Syracuse, N. Y.	0	0	0	0	22	0	2	0	4	0	0	2
Tacoma, Wash.	0	0	0	0	0	0	2	0	4	0	0	27
Tampa, Fla.	0	0	0	0	10	0	2	0	1	0	0	4
Terre Haute, Ind.	0	0	1	2	0	0	0	0	0	0	0	0
Topeka, Kans.	0	0	0	2	0	0	6	0	1	0	0	0
Trenton, N. J.	0	0	0	4	0	0	2	0	2	0	0	7
Washington, D. C.	2	0	3	1	46	2	7	0	7	0	0	6
Wheeling, W. Va.	0	0	0	0	0	0	2	0	13	0	1	31
Wichita, Kans.	0	0	0	0	19	0	3	0	0	0	0	0
Wilmington, Del.	0	0	0	0	0	0	5	0	5	0	0	5
Wilmington, N. C.	0	0	0	0	192	0	5	0	11	0	0	0
Winston-Salem, N. C.	0	0	0	0	127	0	1	0	0	0	0	0
Worcester, Mass.	0	0	0	4	2	2	7	0	0	0	0	0

Dysentery, amebic.—Cases: Dallas, 1; New York, 4; St. Louis, 1; Worcester, 1.
 Dysentery, bacillary.—Cases: Los Angeles, 1; New York, 1.
 Leprosy.—Cases: New Orleans, 1.
 Typhus fever.—Cases: Savannah, 1.

Rates (annual basis) per 100,000 population for the group of 87 cities in the preceding table (estimated population, 1942, 33,962,266)

Period	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Typhoid fever cases	Whooping cough cases
		Cases	Deaths						
Week ended Mar. 7, 1942...	11.21	45.14	7.98	598.93	82.14	229.07	0.15	2.30	170.57
Average for week, 1937-41...	18.28	125.36	18.44	1,118.32	119.01	273.50	4.18	3.41	175.86

FOREIGN REPORTS

CANADA

Provinces—Communicable diseases—Week ended February 21, 1942.—
 During the week ended February 21, 1942, cases of certain communicable diseases were reported by the Dominion Bureau of Statistics of Canada as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Cerebrospinal meningitis		2	2	5	7		1		4	21
Chickenpox	1	17		190	427	63	37	20	150	905
Diphtheria	1	25		30	4	3	1		2	66
German measles	1	1		56	51	17	18	16	46	206
Influenza		9			20	5			20	54
Measles		5	1	555	117	166	47	6	38	935
Mumps	1	10		446	533	115	231	45	449	1,830
Pneumonia		8			4	1	2		9	24
Scarlet fever	3	19	7	93	311	49	32	62	38	614
Tuberculosis		4	13	64	47	46	4			178
Typhoid and paratyphoid fever				6						6
Undulant fever					1					1
Whooping cough		18	2	162	62	6	4	1	27	282
Other communicable diseases		1		7	214	34	7	1	4	263

CUBA

Habana—Communicable diseases—4 weeks ended March 7, 1942.—
 During the 4 weeks ended March 7, 1942, certain communicable diseases were reported in Habana, Cuba, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Diphtheria	22	1	Scarlet fever	2	
Leprosy	1		Tuberculosis	13	3
Malaria	16		Typhoid fever	33	2
Measles	19				

Provinces—Notifiable diseases—4 weeks ended January 31, 1942.—
 During the 4 weeks ended January 31, 1942, cases of certain notifiable diseases were reported in the Provinces of Cuba as follows:

Disease	Pinar del Rio	Habana	Matanzas	Santa Clara	Camaguey	Oriente	Total
Cancer	1	2	1	8		15	27
Chickenpox		1		1		1	3
Diphtheria	2	26	1	3	1	8	41
Hookworm disease		21					21
Leprosy		1			1	2	4
Malaria	176	37	1	12	2	540	768
Measles		6	1	5			12
Poliomyelitis		1					1
Scarlet fever		2					2
Trachoma				16			16
Tuberculosis	29	19	19	52	15	29	163
Typhoid fever	12	49	7	23	7	22	125
Whooping cough				1			1
Yaws						1	1

¹ Includes the city of Habana.

MALTA

Notifiable diseases—November 1941.—During the month of November 1941, certain notifiable diseases were reported in the Island of Malta, including the Island of Gozo as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Cancer		11	Lethargic encephalitis		1
Cerebrospinal meningitis	2	1	Measles	1	
Chickenpox	4		Nephritis		21
Diabetes mellitus		18	Pneumonia	54	14
Diarrhea and enteritis (under 2 years of age)		84	Puerperal fever	3	
Diphtheria	21	4	Scarlet fever	3	
Erysipelas	10		Trachoma	8	
Gastroenteritis		94	Tuberculosis (respiratory system)	20	13
Influenza	4		Typhoid fever	30	4
Leprosy		3	Undulant fever	40	2
			Whooping cough	29	

WORLD DISTRIBUTION OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

From medical officers of the Public Health Service, American consuls, International Office of Public Health, Pan American Sanitary Bureau, health section of the League of Nations, and other sources. The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

CHOLERA

[C indicates cases; P, present]

NOTE.—Since many of the figures in the following tables are from weekly reports, the accumulated totals are for approximate dates.

Place	January-December 1941	January 1942	February 1942—week ended—			
			7	14	21	28
ASIA						
Afghanistan: Southern Province	C	P				
Ceylon	C	3				
China:						
Canton	C	464				
Hong Kong	C	1,667				
Macao	C	1,475				
Shanghai	C	834				
India:		97,826				
Bombay	C	15				
Calcutta	C	2,160				
Rangoon	C	116				
India (French)	C	34				
Japan: Taiwan	C	2				

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PLAGUE

[C indicates cases; P, present]

Place	January-December 1941	January 1942	February 1942—week ended—			
			7	14	21	28
AFRICA						
Belgian Congo.....	C	139				
British East Africa:						
Kenya.....	C	768				
Tanganyika Territory.....	C	2				
Uganda.....	C	198				
Egypt: Port Said.....	C	10				
Madagascar.....	C	285	22			19
Morocco.....	C	2,210	21	1	4	6
Casablanca ¹	C	4				
Tunisia: Tunis.....	C	2				
Union of South Africa.....	C	174	2			
ASIA						
China:						
Chekiang.....	C	125				
Fukien Province: ⁶						
Foochow.....	C	3				
Hunan Province.....	C	7				
Dutch East Indies:						
Java and Madura.....	C	494				
West Java.....	C	378				
India.....	C	4,144				
Calcutta.....	C	3				
Rangoon.....	C	9				
Indochina (French).....	C	26				
Palestine: Haifa.....	C	10	2		1	
Plague-infected rats.....		72				
Thailand: Lampang Province.....	C	3				
EUROPE						
Portugal: Azores Islands.....	C	3				
NORTH AMERICA						
Canada—Alberta—Plague-infected ground squirrel.....		1				
SOUTH AMERICA						
Argentina:						
Buenos Aires Province.....	C	3				
Cordoba Province.....	C	50				
Mendoza Province.....	C	3				
Santa Fe Province—Plague-infected rats.....		67				
Santiago del Estero Province.....	C	2				
Brazil:						
Alagoas State.....	C	45				
Bahia State.....	C	12	P			
Pernambuco State.....	C	96				
Rio de Janeiro State.....	C	2				
Chile:						
Santiago.....	C	1				
Valparaiso.....	C	2		1		
Ecuador.....	C	133				
Peru:						
Ancash Department.....	C	10	6			
Lambayeque Department.....	C	3				
Libertad Department.....	C	12	2			
Salaverry—Plague-infected rats.....			P			

1 Includes 21 cases of pneumonic plague.
 2 For the month of February.
 3 A report dated June 23, 1941, stated that an outbreak of plague had occurred in Casablanca, Morocco, where several deaths had been reported.
 4 Final figures for the year indicate 74 cases were reported instead of 93 cases as previously published.
 5 October 2 to December 6, 1941.
 6 A report dated Nov. 22, 1941, stated that bubonic plague had appeared in epidemic form in Shaowu and Yangkow, Fukien Province, China.
 7 For November and December 1941.
 8 January to October 25, 1941.
 9 Includes 3 cases of pneumonic plague.
 10 Imported.
 11 January to April 1941, inclusive.

PLAGUE—Continued
[C indicates cases; P, present]

Place	January-December 1941	January 1942	February 1942—week ended—			
			7	14	21	28
SOUTH AMERICA—continued						
Peru—Continued.						
Lima Department..... C	24	14				
Moquegua Department—Ho..... C	7					
Piura Department..... C	11	3				
OCEANIA						
Hawaii Territory: ¹ Plague-infected rats.....	75	8	1	1		
New Caledonia..... C	11					

¹ During April and May 1941, 4 lots of plague-infected fleas were also reported in Hawaii Territory.

SMALLPOX

[C indicates cases]

Place	January-December 1941	January 1942	February 7, 1942	February 14, 1942	February 21, 1942	February 28, 1942
AFRICA						
Algeria..... C	935	150			23	
Angola..... C	129					
Belgian Congo..... C	682					
British East Africa..... C	72					
Dahomey..... C	467					
French Guinea..... C	45					
French West Africa..... C	3	41				
Gold Coast..... C	510					133
Ivory Coast..... C	40					
Morocco ¹ C	648	441	112		55	38
Nigeria..... C	1,026					
Niger Territory..... C	273					
Portuguese East Africa..... C	9					
Portuguese Guinea..... C	20					
Rhodesia: Southern..... C	86					
Senegal..... C	65					
Sierra Leone..... C	15					
Sudan (Anglo-Egyptian)..... C	7					
Sudan (French)..... C	19					
Tunisia: Tunis..... C	41					
Union of South Africa..... C	758					
ASIA						
Ceylon..... C	114					
China..... C	259					
Chosen..... C	696					
Dutch East Indies—Bali Island..... C	3					
India..... C	24,484					
India (French)..... C	9					
India (Portuguese)..... C	70					
Indochina (French)..... C	1,208	137				313
Iran..... C	8					
Iraq..... C	1,593	9				
Japan..... C	200					
Straits Settlements..... C	1					
Syria..... C	1					
Thailand..... C	303					
EUROPE						
France:						
Seine Department..... C						141
Unoccupied zone..... C	1		6	7		
Portugal..... C	53	8	2			
Spain..... C	457	20				
Switzerland..... C	1					

¹ For June.
² For February.
³ A report dated Dec. 31, 1941, stated that an epidemic of smallpox had occurred near Casablanca, Morocco, where about 100 cases per week were reported.
⁴ For December.
⁵ Imported.

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SMALLPOX—Continued

[C indicates cases]

Place	January-December 1941	January 1942	February 1942—week ended—			
			7	14	21	28
NORTH AMERICA						
Canada.....	C	25				
Dominican Republic.....	C	2				
Guatemala.....	C	6				
Mexico.....	C	321				
Panama Canal Zone (alastrim).....	C	* 11				
SOUTH AMERICA						
Bolivia.....	C	18				
Brazil.....	C	7 1				
Colombia.....	C	935				
Paraguay.....	C	* 8				
Peru.....	C	1,841				
Uruguay.....	C	7				
Venezuela (alastrim).....	C	254	36			

* October, November, and December.

7 For August.

* January, February, and March.

TYPHUS FEVER

[C indicates cases]

AFRICA						
Algeria.....	C	12,827	3,362			1,988
British East Africa: Kenya.....	C	12				
Egypt.....	C	9,324	1,189	515		
Morocco.....	C	1,471	1,443	634	646	793
Sierra Leone.....	C	5				
Tunisia.....	C	7,078	1,819	416		
Union of South Africa.....	C	780				
ASIA						
China.....	C	245				
Chosen.....	C	425				
Dutch East Indies: Sumatra.....	C	136				
India.....	C	4	3			
Iran.....	C	115				
Iraq.....	C	53	3			
Japan.....	C	864				
Malaya: Unfederated States.....	C	1				
Palestine.....	C	232	4			
Straits Settlements.....	C	8				
Trans-Jordan.....	C	9				
EUROPE						
Bulgaria.....	C	284	27	3		22
Czechoslovakia.....	C	28				42
France (unoccupied zone).....	C	2		2		2
Germany.....	C	2,158				
Gibraltar.....	C	2				
Greece.....	C	7				
Hungary.....	C	652	122	19	13	32
Irish Free State.....	C	25				42
Poland.....	C	3,786				
Portugal.....	C	50				
Rumania.....	C	1,827	688	199	152	237
Spain.....	C	9,560	975			106
Switzerland.....	C	5				
Turkey.....	C	704		12	38	15
Union of Soviet Socialist Republics ¹	C		* 16			21
Yugoslavia.....	C	86				

¹ Information dated Dec. 31, 1941, reports typhus fever present in epidemic form in Casablanca, Morocco.

² Imported.

³ See also PUBLIC HEALTH REPORTS of Mar. 13, 1942, p. 407.

⁴ For 1 week.

TYPHUS FEVER—Continued

[C indicates cases]

Place	January-December 1941	January 1942	February 1942—week ended—			
			7	14	21	28
NORTH AMERICA						
Guatemala.....	C	190	14			¹ 14
Jamaica.....	C		1	2	2	
Mexico.....	C	222				
Panama Canal Zone.....	C	5				
Puerto Rico.....	C	12	2		1	
SOUTH AMERICA						
Bolivia.....	C	⁶ 75				
Brazil.....	C	1				
Chile.....	C	337				
Colombia.....	C	11				
Ecuador.....	C	127	7			
Peru.....	C	1,435				
Venezuela.....	C	59				
OCEANIA						
Australia.....	C	15	4			
Hawaii Territory.....	C	60	8	1	2	1

¹ For February.

⁶ For January, February, and March.

YELLOW FEVER

[C indicates cases; D, deaths]

AFRICA					
Belgian Congo:					
Aba.....	C	12			
Kimvulu.....	C	1			
Libenge.....	C	1			
Stanleyville.....	D	1			
British East Africa: Uganda.....	C	1			
Dahomey: Grand Popo.....	C	12			
French Equatorial Africa:					
Gabon.....	C	2			
Mayumba.....	C	4			
French Guinea.....	C	13			
French West Africa.....	C	5	1		
Gold Coast.....	C	13			
Accra.....	C	1			
Ivory Coast.....	C	18	1		
Nigeria.....	C	11			
Senegal..... ¹	C				
Sierra Leone: Freetown.....	C		1		
Spanish Guinea.....	D	4			
Sudan (French).....	C	11	11		
Togo: Hohoe.....	C		1		
SOUTH AMERICA ⁴					
Brazil:					
Acre Territory.....	D	1			
Amazonas State.....	D	4			
Bahia State.....	D	3			
Para State.....	D	8			
Colombia:					
Antioquia Department.....	D	3			
Boyaca Department.....	D	8		2	
Intendencia of Meta.....	D	15	1		
Santander Department.....	D	20	1		
Tolima Department.....	D	1			
Peru: Junin Department.....	C	5			
Venezuela: Bolivar State.....	C	1			

¹ Suspected.

² Includes 1 suspected case.

³ Includes 4 suspected cases.

⁴ According to information dated Feb. 9, 1942, 15 deaths from yellow fever among Europeans have occurred in Senegal.

⁵ Includes 5 suspected cases.

⁶ All yellow fever in South America is of the jungle type unless otherwise specified.

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COURT DECISION ON PUBLIC HEALTH

Sewage disposal—statute held valid—action of State board of health and State committee on water pollution held authorized.—(Wisconsin Supreme Court; *State ex rel. Martin, Attorney General, v. City of Juneau*, 300 N. W. 187; decided October 7, 1941.) The State Board of Health and the State Committee on Water Pollution of Wisconsin found that the discharge of inadequately treated sewage from the city of Juneau into a drainage ditch caused, among other things, a menace to public health and a nuisance. Based on these findings the board and committee ordered that the city take immediate steps to secure detailed plans and specifications for a complete sewage treatment system or plant adequate to meet local needs, which plans and specifications were to be submitted to the board for approval in accordance with statutory requirements. It was also ordered that the treatment system or plant be installed and placed in operation in a little less than a year and that it be so operated and maintained as to prevent objectionable pollution conditions in the ditch. The city failed to comply with the order and the State sought a mandatory injunction commanding the city to comply and asking that it be enjoined from discharging inadequately treated sewage into the drainage ditch after a reasonable time to be determined by the court. The city did not pursue the statutory remedies provided for the review of the order or the arbitration of the question, and the Supreme Court of Wisconsin said that, because of the city's failure to avail itself of the remedies provided, it was considered that in the instant action the city was foreclosed from raising any questions except (1) the validity of chapter 144 of the Wisconsin Statutes, and (2) whether the State board of health and the State committee on water pollution acted within the powers conferred upon them by statute. The city, upon appeal by it from the lower court's order, contended that chapter 144 was invalid and unconstitutional because (1) it was vague and indefinite and incapable of enforcement, (2) it unlawfully delegated both legislative and judicial power, and (3) it was unreasonable, arbitrary, and oppressive.

The purpose of the statute respecting the State committee on water pollution was to prevent pollution of the waters of the State and under it the committee had the duty and power to issue special orders directing particular owners to secure such operating results toward pollution control as the committee might prescribe. One objection of the city was that because the words "operating results" were not specifically defined the statute was invalid because indefinite. The supreme court said that it would seem to be reasonably plain that an operating result was one which prevented pollution and rejected this

objection and stated that other specific objections of the same general character did not need to be separately considered. Relative to the question of delegation of legislative and judicial power, it was the view of the court that the limitations upon the power to delegate had not been exceeded by the provisions of chapter 144. The appellate court also pointed out that what the statute conferred upon the State board of health and the State committee on water pollution was authority to promote public health. "The discretion vested in" the board and committee "is not arbitrary, it is subject to court review and the rights of all parties are fully protected." Neither did the court find any basis for the city's contention that the board and committee had acted beyond and without the powers conferred upon them by chapter 144.

The statute being valid and the board and committee having acted within their statutory powers, the supreme court affirmed the lower court's order.

COURT DECISION ON PUBLIC HEALTH

Statutes regarding appointment of health officer for particular county alone held unconstitutional.—(North Carolina Supreme Court; *Board of Health of Nash County et al. v. Board of Commissioners of Nash County et al.*, 16 S.E.2d 677; decided October 8, 1941.) The general statutory law of North Carolina provided that a county board of health should elect either a county physician or a county health officer. In 1941 the State legislature enacted 2 statutes which by their terms applied only to Nash County, 1 out of the 100 counties of the State. These statutes, the later of which amended the prior one, provided substantially that the appointment of a health officer of Nash County should not become effective until approved by the board of county commissioners and that, if the health officer appointed by the board of health should be disapproved by the county commissioners, such appointee would be ineligible and the board of health should, within 30 days, appoint some other person. It was further provided that, if the county commissioners failed to approve the second appointee, the secretary of the State board of health should appoint, etc. The Nash County Board of Health appointed a certain person as health officer and the board of commissioners of the county disapproved such appointment. The board of health took no further action in the matter but in a proceeding contended that the two 1941 statutes referred to were unconstitutional and void because in violation of a State constitutional provision which read, in part, that the general assembly "shall not pass any local, private, or special act or resolution * * * relating to health, sanitation, and the abatement of nuisances."

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The Supreme Court of North Carolina stated that there was no room to doubt that the said statutes were local and that the court was committed to the proposition that a law affecting the selection of officers to whom was given the duty of administering health laws was a law "relating to health." "We have become increasingly conscious," said the court, "of the fact that many of the problems which heretofore we have considered purely local are so related to the welfare of the whole State as to demand uniform and coordinated action under general laws." The constitutional provision in question was stated to mention especially general laws relating to health as being within its protective purview, "recognizing that the alleviation of suffering and disease, the eradication or reduction of communicable disease in its humanitarian, social, and economic aspect, is a State-wide problem which ought not to be interfered with by local dilatory laws which are so frequently the outcome of local indifference, or factional and political disagreements." It was the court's view that the two 1941 statutes involved were unconstitutional and void and that the election of a county health officer by the board of health was valid and effective without reference to any act by the county commissioners.

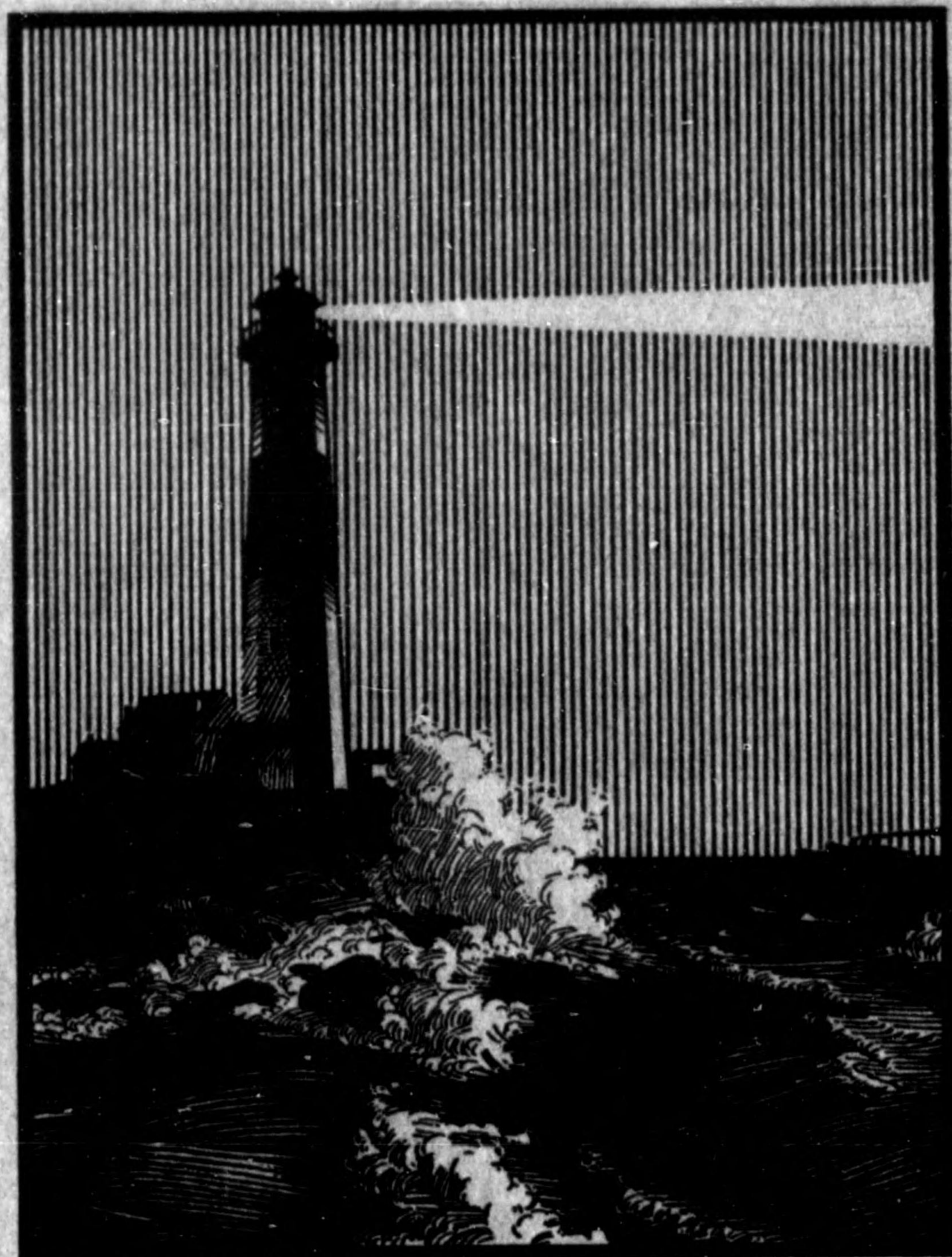
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HEALTH WEEK FOLLOW-UP NUMBER

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HELP YOURSELF AND YOUR COMMUNITY TO BETTER HEALTH

NATIONAL NEGRO HEALTH NEWS

VOL. 14

April-June 1946

NO. 2

West Virginia State College Completes Second Health Education Workshop

The Second Summer Health Education Workshop was held at West Virginia State College, Institute, June 17 to 29, 1946. Cooperating in this project were the Department of Health, Physical Education and Safety of the College, United States Public Health Service, State Department of Health, Kanawha County Health Unit, and the Kanawha County School Health Service.

The Workshop was designed especially for teachers who through their work in the various schools and communities discover certain problems of health in which they need guidance. Other persons having an interest in the promotion of health education activities also attended.

The *Workshop Oracle*, published by the editorial group, stated that "it is through this type of program that the physical and mental health of children can be improved so that the future generations will live healthier and happier lives."

HEALTH EDUCATION WORKSHOP PROGRAM

The Workshop program was built around the following areas of study: (1) Nutrition; (2) Social Hygiene; (3) Dental Health; (4) Health Inspection and the Control of Communicable Diseases; (5) Safety and Accident Prevention; and (6) Materials and Methods of Health Education in Elementary and Secondary Schools.

These areas were assigned to three working groups for development. In addition to the Group Study, each member selected an Individual Problem which was assigned for study. The outcomes of all studies were considered in general sessions of the workshop.

Participants in the Workshop, by Groups

Group A.—*Nutrition and Dental Health*: Mrs. Beatrice C. Davis, Chairman, Charleston, West Virginia; Mr. Charles O. Hundley, Mt. Hope, West Virginia; Miss Hazel I. Paxton, Charleston, West Virginia; Mrs. Margaret E. Starks, Bellaire, Ohio; and Mrs. Mary E. Swope, Mt. Hope, West Virginia.

Group B.—*Communicable Disease Education and Social Hygiene*: Mrs. Alma W. Pleasants, Chairman, Charlottesville, Virginia; Mr. Linwood Greene, Portsmouth, Virginia; Miss Evelyn E.

Howard, Alexandria, Virginia; and Mr. Luther Leshore, Williamson, West Virginia.

Group C.—*Health Education Materials and Safety Education*: Mrs. Lucille Fisher, Chairman, Reidsville, North Carolina; Miss Juanita Campbell, Dayton, Ohio; Mr. Fred D. Middleton, Charleston, South Carolina; Mr. Anthony Robinson, Birmingham, Alabama; Miss Ruth E. Ross, Institute, West Virginia; and Mr. James C. Wilson, Yukon, West Virginia.

RESUME OF AREA REPORTS

Area A (Nutrition and Dental Health)

Nutrition: In view of the continued need for adequate nutrition for America and especially the current food shortage, "Nutrition Education for Elementary Schools" was selected by one of the workshop groups as its area.

The methods and techniques for meeting the nutrition needs of school children during the present food shortage are largely matters of education and economics. The school lunch—its planning, operation and efficient supervision—coupled with the utilization of funds of the Federal School Lunch Program will improve quality and quantity of the school child's diet. Food habits acquired by the children will be reflected ultimately in food habits of the families of the community.

This group now has an awareness of local and State resources, such as visual aids and demonstrations, to teach the public the values, selection, and use of proper foods.

Dental Health: A nutrition course for elementary children with a planned program should result in desirable habits and attitudes that carry over from the school into the daily life.

The backbone of dental health is good nutrition and proper dental hygiene. In order to promote the development of desirable food habits in children, we plan to introduce a nutrition unit at the beginning of the school year. Specific instruction will be instituted in a period of three months and will be continually carried forward throughout the school year.

The teacher has the opportunity also to develop dental hygiene in the classroom through instructions and demonstrations of proper toothbrushing and mouth cleanliness.

The workshop presented many printed and illustrative materials to aid the teacher. Consultation with Dr. W. H. Rumble, director of Dental Hygiene, West Virginia State Department of Health, and a motion picture film on correct inspection of school children were very helpful.

One of the most difficult problems in some schools and communities is the correction of dental defects. Where there is no school or private dentist in the community, dental service might be provided either by arranging for periodical visits from a dentist in a neighboring community or for groups of school children to be taken on scheduled visits to the dentist.

There is hope in the news that West Virginia soon will have a visiting Dental Mobile Unit.

Area B (Communicable Disease Education and Social Hygiene)

Communicable Disease: The findings of the Selective Service during the war showed the great lack of proper health knowledge among the young men examined.

This of course was due in large measure to failure of schools and homes to provide proper health education and guidance. Although much is known about thorough physical examinations, and the methods and materials of health education, there is a great lag between available knowledge and services and their use by the people who need them.

Therefore, the workshop group proposes that the solution to the problem depends upon the establishment of adequate programs and facilities on all school levels and a program of community health education sponsored by the official and voluntary agencies of the community.

As a unit for the elementary and secondary schools, it is suggested that a school health council be established for consideration of knowledge and facilities which are now available to them.

Social Hygiene Education: Every teacher influences the attitude toward sex, either directly or indirectly. It is the duty of every person interested in improving the social conditions of the community to help develop desirable habits and proper behavior.

In the past most parents, teachers and ministers attempted to teach morals by the *fear motive*, making people *afraid* of venereal diseases rather than facing the problem intelligently and frankly. They did not prevent venereal diseases, but they did make people more liable to their ill effects because of evasion and suppression. Home security alone does not satisfy sex instincts, because misinformation and experience outside the home greatly influence behavior.

If we can educate the younger generation in ways of forming habits for personal and group security, we will automatically eliminate the venereal diseases and many of the mental hygiene problems which have their origin in the repression of normal sex impulses and the accidents or wilful violations of the safeguards of self and society.

The public now is being taught that venereal disease is not a *shame* or a *crime* but that the failure to properly prepare youth for life, and, in case of venereal infection, not to have the disease properly and promptly treated, is an educational and social delinquency.

The workshop recognized the problem of sex delinquency, and the inadequacy of sex guidance in the home and school, and social hygiene in the community. As a result of experience in the workshop, the members have outlined a simple program for the teacher as an instructor of youth and a member of the community to make available to the several age groups, youth and adults, the resources of education, health, and social agencies.

Emphasis on wholesome outlets—proper recreation, social activities, use of skills and interests in hobbies, etc.—is important; for with all information, there must be satisfying opportunities



(Photos by James Hill.)

Coordinator Discusses Workshop Program with Dean and Consultants



Area Group Developing Unit on Methods and Materials

for self-expression, good times together, and assurance of the rewards for good personal behavior and physical fitness in the enjoyment of home and family life.

Finally, you cannot successfully *teach* sex education as a curricular subject; rather, wholesome sex attitudes are developed in the integrated school program and in the every-day experience of the adequate personality in a safe and enjoyable environment.

Area C (Health Education Materials and Safety Education)

Health Education: Area C chose the problem of the "Examination and study of health materials and methods that will prove effective for successful health instruction." Our primary purpose has been the examination of health procedures from the standpoint of the community as a whole, with special reference to the contribution which the school should make.

The main objective has been to study and evaluate health education materials, to be familiar with resources that are on hand, and to make our health education effective.

Members of the entire group shared the responsibility in checking resources and making a bibliography of available materials. Resources were catalogued according to National, State, and Local levels, and official and nonofficial listings.

We learned from study that the school, itself, has much to offer toward making health instruction alive and meaningful. Several suggestions were made: The school health survey; the physical examination and observation of school children; the hot lunch program; community field trips to dairies, water purification plants, etc. The school library and the librarian can be utilized to build up sound reference materials, and to develop exhibits.

It was recommended that teachers plan a special corner in their classrooms to afford space for models and sand-box exhibits, a small health reference library, and the like. The entire study group agrees that a School Health Council would offer a teaching opportunity, and likewise help in solving school health problems. Health clubs within each school might stimulate objective thinking in analyzing and solving health problems.

Channels for health education were reviewed—the radio, person-to-person contacts, speakers'

bureaus, lectures, newspapers, periodicals, other literature, motion pictures, exhibits and posters.

Organization for public health education was urged in the form of a Community Health Council which should be representative of the entire community.

Safety and Accident Prevention: The group working on "Safety and Accident Prevention" realized that the theme of this division would be that of coordinating all efforts and of encouraging more thorough coverage.

The group concluded that safety was the joint responsibility of the schools, the municipal or local governments, and the people themselves. The civic organizations are among the best agencies for public safety education. Schools should provide safety instruction for students and organize such aids as safety groups and safety courts.

The media for the dissemination of information adapted to individual group instruction were reviewed. Prevention of accidents requires educational techniques which should be of great interest and help to health educators and school personnel.

Visual Aids Presented at Workshop

Movies.—Several moving pictures and strip films were presented by the State Department of Health. Announcement was made that they are available, free of charge, from designated sources. Mr. James C. Wilson, member of the workshop, served as visual aids technician. The movies were used to demonstrate visual aids as a method of instruction.

Posters.—Well selected, colorful posters lining the walls, were displayed and discussed as informational and motivating media.

Library.—The library contained books, booklets, pamphlets, charts, and graphs that covered all of the phases of health education.

WORKSHOP HIGHLIGHTS

Mining Expert Presents Materials.—Mr. U. G. Carter, Mining Extension Service, West Virginia State College, presented to the workshop a "Health and Safety" unit. The materials consisted of a poster on 7 ways of health: (1) Bathing; (2) Nutrition; (3) Rest; (4) Recreation; (5) Prevention of communicable disease; (6) Periodic health examinations for the family; and (7) Mental hygiene.

He also presented a map of West Virginia showing the distribution of mines in the State, a poster on safety and accident prevention for the miners, and a record of coal mine fatalities in the State. This unit was used in both the health and safety areas of the workshop.

The Thirty-ninth Annual Session of the West Virginia Medical Society was held here during the second week of the Health Education Workshop. Many helpful exchanges were made between the Workshop personnel and the Medical Society.

Field Trip

On Monday, June 24, members of the workshop visited the State Department of Health and the City Water Works. Dr. J. E. Offner, State Health Commissioner, greeted the group and assured the members of the cooperation of his department and staff.

At the water plant, the chief engineer explained the system of water collection, purification and supply, and testing. The tour included a complete inspection of the plant.

One of the most interesting parts of the plant was the laboratory. The group saw various samples of water in the process of testing for bacteria and other harmful agents.

SOCIAL ACTIVITIES

Members of the workshop were first entertained in a "Get Acquainted" party, Friday night, June 21, in the Blue Room of the Health Center building. In addition to all the fun, refreshments were served to the entire party.

After a very hot morning session on Tuesday, June 25, with everything and everybody sweltering, the group took time out in the afternoon for a plunge into the modern swimming pool.

"The pause that refreshes": Every day, refreshing drinks were served to the group.

The final social get-together was a picnic on the campus of the College, Thursday, June 28.

All of the tedious hours working and planning were forgotten for the time in the shade of the sycamore trees.

WORKSHOP DIRECTOR AND CONSULTANTS

Workshop Coordinator.—Dr. Roscoe C. Brown, Chief, Office of Negro Health Work, United States Public Health Service, Washington, D. C.

Consultants;

Mrs. Ruth J. Frantz, Director, Bureau of Public Health Education and Public Relations, West Virginia State Department of Health

Miss Annette King, Associate Director of Public Health Education, West Virginia State Department of Health

Mr. E. J. Hall, Director, Division of Venereal Disease Resources, West Virginia State Department of Health

Dr. Charles Hedges, Director of Communicable Disease Resources, West Virginia State Department of Health

Dr. W. H. Rumble, Director, Division of Dental Hygiene, West Virginia State Department of Health

Mrs. Clara B. Hamilton, Health Supervisor, West Virginia State College

Mr. William F. Burghardt, Administrative Assistant, Department of Health, Physical Education and Safety, West Virginia State College

Mrs. Ruth B. Jefferson, Department of Home Economics, West Virginia State College.

Dean Harrison H. Ferrell and Dr. Charles C. Hawkins, Director, Department of Health, Physical Education and Safety, collaborated in the direction of the Health Education Workshop activities.

(NOTE.—This report of the Workshop is made up in large measure from *The Workshop Oracle*, a publicity medium project of the workshop groups.)

NOTE.—Report of the Health Education Workshop of the Bluefield (West Virginia) State College, will appear in the next issue of the *NEWS*.

(Continued on p. 6)



Workshoppers' Seminar on Problem-solving and Program-planning

Ten-Year History of the Montgomery County, Maryland, Public Health Lay Council

SHAREHOLDING IN HEALTH is the title of a recently published 10-year history of the Public Health Lay Council of Montgomery County, Maryland, prepared by a committee of the Council of which Mrs. J. Angus Watson, Jr., is chairman.

"My Dear! You Should See the Negro Schools" is the title of a brief chapter which reviews the efforts of the two health officers who have served the County since 1923, to help improve the health and hygiene of Negro schools in the County.

That most of these efforts have developed from a year-around program for Negro health as the National Negro Health Week gradually became a year-around program in the County is evident. There is also an interesting paragraph regarding the survey made by a committee of the Council three years ago, and of the conditions which they report existed in the schools. The report makes no effort to gloss over the fact that it has been an up-hill struggle to secure such improvements as they have brought about. Nor do they mince words as to the need for further improvement, and the problem they face in trying to secure it. There is a promise, however, that the Council will not give up the struggle until it meets with success.

Reading the entire history convinces the reader that the Council knows how to attain success, too. Fund-raising was one of its earliest problems, but now it owns two station wagons for transporting patients to clinics, and pays the drivers who do it. When bigger and better budgeting for health was a

A4
 crying need, even though it was a depression period, the Council went to work in 1940 and came back from budget hearings with more nurses, sanitary inspectors, and an assistant health officer in their pocket. They have succeeded in setting up health centers of their own in many areas of the County, and just now are becoming incorporated, to meet new responsibilities.

Health Education

Selected Sources of Supplementary Health Education Materials

By James G. Faustina, Health Education Consultant, U. S. Public Health Service

FOREWORD

Teachers and health workers have often expressed a need for good health education materials, both general and specific. The U. S. Public Health Service alone receives approximately 3,400 such requests each month. This is not an altogether unexpected occurrence, because health education is a relatively new profession and those engaged in health instruction fully realize the wisdom of the ancient proverb. . . . One picture (chart, pamphlet, or film strip, in this case) is worth a thousand words. Then, too, there is a wealth of free and/or inexpensive health education materials available on request.

Unfortunately, many requests for health education materials are often too general, vague, or even confusing. What should be stated in a request for health education materials? First, be brief and specific. Do not simply state that you want materials on health education, tuberculosis, or venereal disease. State briefly the area of health education in which materials are needed, the groups (school, civic, labor, general community) with which the materials will be used, and other information which will assist the agency in selecting the most suitable materials. Many of the agencies named in this bibliography have lists or catalogues available. If you are not sure what you want, you should request a list or catalogue first. The names of many agencies are often suggestive of the types of materials available, though many agencies have materials covering a wide range of subjects.

Part I of this bibliography lists the names and addresses of agencies. Part II classifies the agencies listed in Part I as to subject matter available from each source. For example, if you are interested in materials on posture, find "POSTURE" in Part II of the bibliography and note numerical listings (POSTURE—1, 10, 25A, 25B, 42, 45, 62, 67A); then write your request to the agencies indicated by the numerals. (1, Aetna Life Insurance Company. 10, American Public Health Association. 25A, U. S. Office of Education. 25B, U. S. Public Health Service. 42, Metropolitan Life Insurance Company. 45, National Dairy Council. 62, Superintendent of Documents, Government Printing Office. 67A, U. S. Department of Labor, Children's Bureau.) Use your school or agency letterhead, when possible, in making requests.

Agencies, teachers, and health educators are requested to make known additional materials or sources of materials. A bibliography of this type must be frequently revised to maintain its usefulness.

James G. Faustina, *Health Education Consultant*, Office of Health Education and Training, Division of Public Health Methods, U. S. Public Health Service. (June 15, 1946.)

PART I

Selected Sources of Health Education Materials

1. Aetna Life Insurance Company, Hartford, Conn.
2. Allied Youth, Inc., 1709 M St. NW., Washington 6, D. C.
3. American Association for Health, Physical Education and Recreation, (National Education Association), 1201 16th St. NW., Washington 6, D. C.
4. American Automobile Association, Pennsylvania Ave. at 17th St. NW., Washington 6, D. C.

- 47 Beaver St.
5. American Cancer Society, ~~350 Fifth Ave.~~, New York ~~N. Y.~~
 6. American Dental Association, 212 E. Superior St., Chicago 11, Ill.
 7. American Heart Association, 889 Lexington Ave., New York, N. Y.
 8. American Home Economics Association, 620 Mills Bldg. NW., Washington 6, D. C.
 9. American Medical Association, Bureau of Health Education, 525 N. Dearborn St., Chicago 10, Ill.
 10. American Public Health Association, 1790 Broadway, New York 19, N. Y.
 11. American Red Cross, 17th and D Sts. NW., Washington 13, D. C.
 12. American Social Hygiene Association, 1790 Broadway, New York 19, N. Y.
 13. American Society for the Hard of Hearing, 1537 35th St. NW., Washington 7, D. C.
 14. Association for Family Living, 220 S. State St., Chicago, Ill.
 15. Association of American Soap and Glycerine Products, Inc., Cleanliness Bureau, 11 W. 42nd St., New York, N. Y.
 16. Better Vision Institute, Inc., 3157 International Bldg., Rockefeller Center, New York, N. Y.
 17. Bristol-Myers Company, 630 Fifth Ave., New York, N. Y.
 18. Child Study Association of America, 221 W. 57th St., New York, N. Y.
 19. Church and Dwight Company, 70 Pine St., New York, N. Y.
 20. Clay-Adams Company, 25 E. 26th St., Chicago, Ill.
 21. Commonwealth Fund, 41 E. 57th St., New York, N. Y.
 22. Dental Societies—State and Local
 23. Eastman Teaching Films, Inc., 343 State St., Rochester, N. Y.
 24. Education Departments—State and Local
 25. Federal Security Agency, Washington 25, D. C.
 - A. U. S. Office of Education
 - B. U. S. Public Health Service, Office of Health Information
 26. Florida Citrus Commission, Lakeland, Fla.
 27. General Motors Corporation, 3044 W. Grand Blvd., Detroit, Mich.
 28. Good Teeth Council, Inc., 400 N. Michigan Ave., Chicago, Ill.
 29. Health Departments—State and Local
 30. Heinz Company, Research Bureau, Pittsburgh, Pa.
 31. Hynson, Westcott, and Dunning, Inc., Charles and Chase Sts., Baltimore, Md.
 32. Institute of Family Relations, 607 S. Hill St., Los Angeles, Calif.
 33. International Cellucotton Products Company, 919 N. Michigan Ave., Chicago, Ill.
 34. Interstate Narcotic Association, 53 W. Jackson Blvd., Chicago, Ill.
 35. Iodent Chemical Company, Detroit, Mich.
 36. Iowa Child Welfare Research Station, University of Iowa, Iowa City, Iowa
 37. Iowa State College, Ames, Iowa
 38. Irradiated Evaporated Milk Institute, 307 N. Michigan Ave., Chicago, Ill.
 39. Kolynos Company, 130 Bristol St., New Haven, Conn.
 40. Lever Brothers Company, 164 Broadway, Department 199, Cambridge, Mass.
 41. Medical Societies—State and Local
 42. Metropolitan Life Insurance Company, 1 Madison Ave., New York 10, N. Y.
 43. National Child Welfare Association, 70 Fifth Ave., New York, N. Y.
 44. National Committee for Mental Hygiene, Inc., 1790 Broadway, New York 19, N. Y.
 45. National Dairy Council, 111 N. Canal St., Chicago 6, Ill.
 46. National Foundation for Infantile Paralysis, 120 Broadway, New York 5, N. Y.
 47. National Health Council, 1790 Broadway, New York 19, N. Y.
 48. National Livestock and Meat Board, Nutrition Department, 407 S. Dearborn St., Chicago, Ill.
 49. National Recreation Association, 315 Fourth Ave., New York, N. Y.
 50. National Safety Council, 20 N. Wacker Drive, Chicago 6, Ill.
 51. National Society for the Prevention of Blindness, 1790 Broadway, New York 19, N. Y.
 52. National Student Health Association, Howard University, Washington 1, D. C.
 53. National Tuberculosis Association, 1790 Broadway, New York 19, N. Y.
 54. New York State Committee on Mental Hygiene, 105 E. 22nd St., New York, N. Y.
 55. New York University, Center for Safety Education, 20 Washington Square, North, New York, N. Y.

56. Nystrom & Company, Inc., 3333 Elston Ave., Chicago, Ill.
57. Pepsodent Company, Educational Dept., 6901 W. 65th St., Chicago, Ill.
58. Personal Products Corporation, Milltown, N. J.
59. Planned Parenthood Federation, Inc., 501 Madison Ave., New York 22, N. Y.
60. Public Affairs Committee, 30 Rockefeller Plaza, New York, N. Y.
61. Society for Visual Education, 100 E. Ohio St., Chicago, Ill.
62. Superintendent of Documents, Government Printing Office, Washington 25, D. C.
63. Travelers Insurance Company, 700 Main St., Hartford, Conn.
64. Tuberculosis Associations—State and Local.
65. United Fruit Company, 1 Federal St., Boston, Mass.
66. United States Department of Agriculture, Washington 25, D. C.
 - A. Bureau of Home Economics
 - B. Extension Service
67. United States Department of Labor, Washington 25, D. C.
 - A. Children's Bureau
 - B. Women's Bureau
68. Wheat Flour Institute, 309 W. Jackson Blvd., Chicago, Ill.
69. Wisconsin Alumni Research Foundation, Madison, Wis.

PART II

Classification of Agencies by Subject Matter Available

- Accidents—1, 11, 42, 50
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- Alcohol and Narcotics—2, 9, 34, 61
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- Bacteria—29, 42
- Blindness—9, 25A, 51, 61
- Bubonic Plague—25B
- Cancer—1, 5, 9, 10, 25B, 42, 47, 60, 61
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 - Ages 1-6—9, 66A
 - Habit Formation—42, 66A
 - Health Status—9, 25A
 - Infant and Child Care—9, 66A
 - Prenatal Care—9, 10, 25B, 36, 38, 42
 - Safety—10, 25A, 42, 47, 50, 55

- Cleanliness—15, 17, 40
- Colds—1, 10, 25B, 42, 47, 61
- Common Communicable Diseases—9, 10, 25A, 25B, 42
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- Diphtheria—1, 9, 25B, 42, 61
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 - Prenatal and Infant Health—9, 10, 46, 47, 67A
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 - Health Biographies—10, 42
 - Health Education Bibliographies—3, 52
 - Methods in Health Education—3, 9, 10, 25B, 68
 - School Health—3, 25A, 25B, 42, 52
 - School Programs in Health—3, 24, 42
 - Teaching Plans—9, 24, 25A, 42, 45, 50, 52, 53, 55, 62, 63, 68
 - Tests and Standards—3, 25B
- Hearing—9, 10, 13, 42, 47
- Heart and Heart Diseases—7, 9, 42, 47, 61
 - Heart Disease in Childhood—7, 42
 - Heart Facts and Fallacies—42
- Height and Weight Tables—9, 10, 25A, 29, 42, 61
- Home Care of the Sick—8, 11, 29, 42
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 33, 37, 44, 47, 52, 58, 62
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 Speech and Speech Defects—9, 25A
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 Syphilis—9, 10, 12, 25B, 29, 47, 60, 62
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Assistant Health Educator Named

Dr. G. Canby Robinson, executive secretary of the Maryland Tuberculosis Association, has announced the appointment of Miss Harriet Peat, of Baltimore, as assistant health educator on the staff of this organization to work with the Negro population.

"The tuberculosis death rate in Baltimore among Negroes is five times that of the white population," Dr. Robinson said. "This makes our over-all death rate the highest of the ten largest cities in the Nation. We feel that one of the best methods of attacking this disease is through education, and the appointment of a Negro worker will be of the greatest aid." Miss Peat was graduated from Douglass High School and Morgan State College. She has been awarded a summer scholarship to the University of Michigan beginning July 1 and will resume duties after completing the course.—(*Evening Sun*, Baltimore, Md., May 23, 1946.)

Federal Grant to Meharry Medical College for Cancer Study

Dr. Thomas Parran, Surgeon General of the U. S. Public Health Service, has announced that Meharry Medical College, Nashville, Tennessee, will receive one of the eight Federal grants-in-aid for cancer study recommended by the National Advisory Cancer Council. The Council is adviser to the Surgeon General on matters of cancer control.

Booker T. Washington in the Hall of Fame

A bronze bust of the late Booker T. Washington, noted Negro educator and founder of Tuskegee Institute in Alabama, was unveiled at three o'clock, Thursday afternoon, May 23, 1946, in the Hall of Fame for Great Americans at New York University. Booker Washington's election to the Hall of Fame last year, one of five men chosen in the tenth quinquennial, marked the first time that a Negro had been so honored.

Basil O'Connor, newly-elected chairman of the Tuskegee Institute Board of Trustees, and Portia Washington Pittman, daughter of the educator, were guests at the unveiling.

A procession, led by sixty members of the Tuskegee choir and including many educators and former friends and associates of the late Dr. Washington, marched through the colonnade of the Hall of Fame to the auditorium, to open the exercises. The Hampton Institute Creative Dance Group enacted a dramatic pantomime interpreting the life of Booker T. Washington, and Miss Dorothy Maynor, soprano, sang several solos and joined the choir in spirituals.



(Courtesy of Press Association, Inc.)

Unveiling of bronze bust of Booker T. Washington, noted Negro educator, in the Hall of Fame, New York University, May 23, 1946. (Left to Right) Mrs. Portia Washington Pittman, daughter of Booker T. Washington; Richmond Barthe, sculptor; Gloria Davidson Washington, granddaughter of Booker T. Washington.

Message from President Truman

A letter of congratulation from President Truman was read by Dr. Alvin C. Busse, director of public occasions at the university, and said in part: "Booker T. Washington has a living monument in Tuskegee Institute. Now he is numbered among the immortal Americans in the Hall of Fame. In the years to come he will be an inspiration to every American who forges ahead, despite the obstacles his birth of origin may place in his way. We are proud to have an America that counts this man among its heroes."

The bust, which is a joint gift of Tuskegee Institute and Hampton Institute, was presented for unveiling by Dr. Frederick D. Patterson, president of Tuskegee Institute. "Dr. Washington's life symbolizes the hopes and aspirations of mankind through the ages," Dr. Patterson declared, "and his doctrines stressed love instead of hate, industry instead of idleness, thrift instead of waste, and modesty and humility instead of boastfulness and pride."

Granddaughter Unveiled Bust

Gloria Davidson Washington, Howard University student and granddaughter of Washington, unveiled the bust created by Richmond Barthe, first Negro sculptor to have work admitted to the Hall of Fame. Wreaths were laid at the base of the bronze bust.

Other speakers at the unveiling ceremonies were Ralph D. Bridgman, president of Hampton Institute and former Dean of Students at Brooklyn College, and Jackson Davis, associate director of the General Education Board.

Dr. Harold O. Voorhis, vice chancellor and secretary of the university, gave the welcoming address, and Dr. James Rowland Angell, director of the Hall of Fame, presided.

Selections to the Hall of Fame are made every five years by 100 distinguished citizens throughout the nation. The list of those already chosen includes the names of Presidents of the United States, scientists, inventors, educators, explorers, artists, writers and philanthropists. Booker T. Washington was the 77th person elected to the Hall. One of the provisions of selection is that the nominee has been dead at least ten years.

Educator, Writer, and Humanitarian

Booker T. Washington was elected to the Hall of Fame for his work in organizing and developing

Tuskegee Institute and correlating general and vocational studies so effectively that national and international recognition was given him.

As a facile writer and speaker, he improved race relations through his public addresses, writing, and goodwill tours. In 1915, C. W. Hare, then a southern editor, declared: "No man since the Civil War did more to promote harmonious relations between the races." Washington was the author of ten books, best known of which is "Up From Slavery," published in 1901.

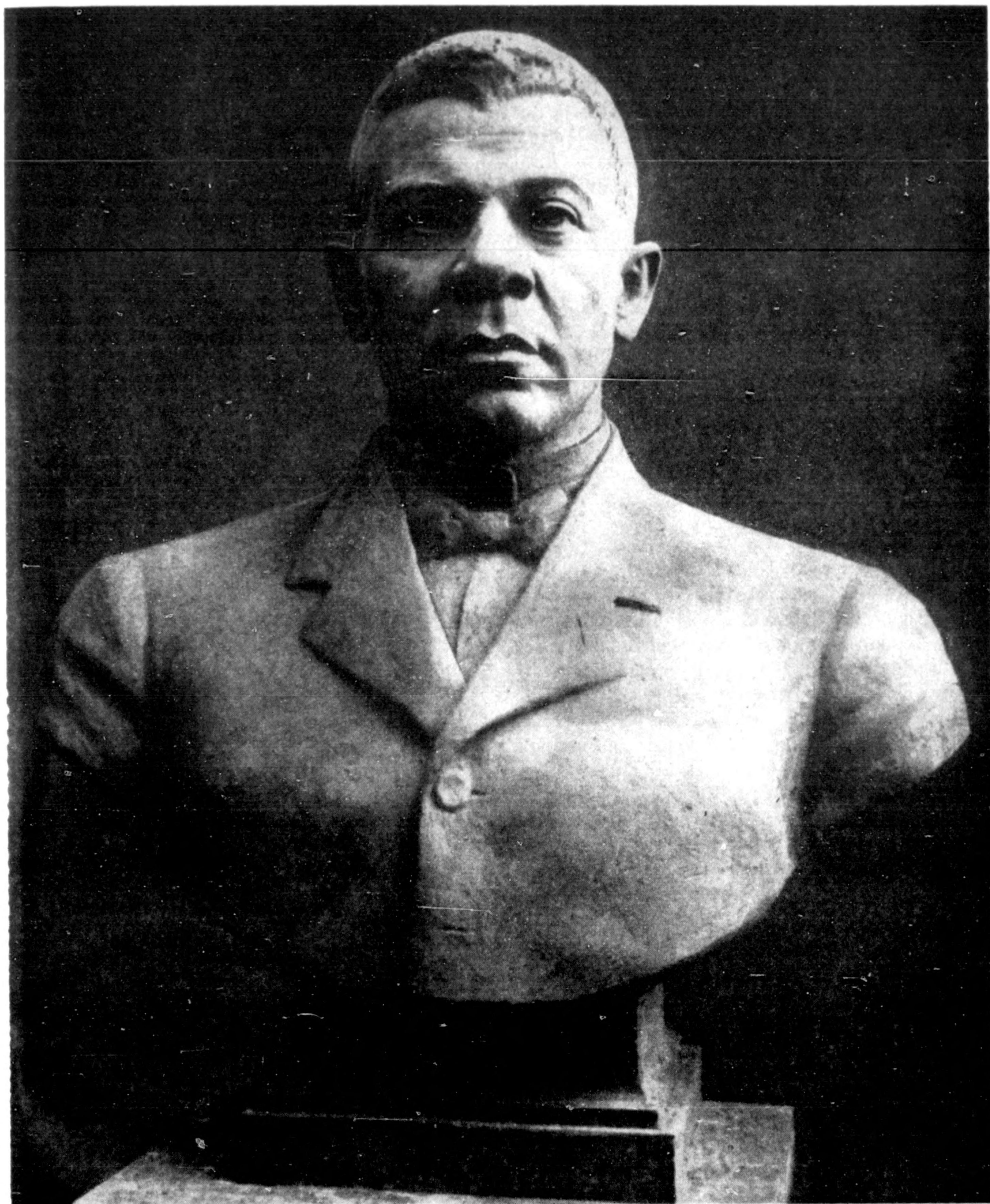
Born a slave in 1856 near Hale's Ford, Virginia, he traveled by wagon over the mountains to Malden, where he worked either in a salt furnace or coal mine until 1871. Eager to learn, he attended public school half a day for a few months, and in 1872 made his way to Hampton Institute. He worked his way through this school, graduating in 1875. He later received an honorary M. A. degree from Harvard University and an LL. D. from Dartmouth University.

Builder of Tuskegee Institute

In 1881 he was chosen to go to Tuskegee to teach a Negro normal school for which the Alabama Legislature had appropriated \$2,000. He began teaching July 4, 1881, in an old church. The next year with the aid of northern friends and the people of Tuskegee, a 100-acre farm was purchased. He developed the school into the great Tuskegee Institute which today covers more than 2,000 acres and has about 100 fine buildings, where 1,500 young men and women receive training as teachers, farmers, mechanics, and homemakers.

Dr. Washington founded the National Negro Health Week in 1915. With great sympathy for his people and a keen sense of human values, he said, "A people must be well to do well." This health movement is now a part of the public health education program of the Office of Negro Health Work of the United States Public Health Service.

The last 20 years of his life were spent in service to his race as much outside the Institute as in it. He was in great demand as a public speaker. While addressing a meeting in New Haven, Connecticut, October 25, 1915, he became ill. He was taken to a New York hospital where physicians told him he had only a short time to live. He insisted on being taken back to Tuskegee where he died a few hours after reaching there, early in the morning of November 14, 1915.



DR. BOOKER T. WASHINGTON

Health, Hospitals, and the Negro*

By Eugene H. Bradley, *Administrative Assistant*, Lincoln Hospital, Durham, N. C.

In 1944 there were 124 Negro hospitals in the United States catering exclusively to colored patients. The bed capacity of these hospitals was 20,800, including 800 bassinets. These institutions were located in 23 States and the District of Columbia. Of these hospitals, 12 were governmental and were operated by Federal, State or municipal governments, and 112 were nongovernmental, operated by church, fraternal, community or proprietary organizations.

The geographical distribution of these institutions was as follows:

Alabama.....	9	Mississippi.....	4
Arkansas.....	5	Missouri.....	7
Washington, D. C.....	3	New Jersey.....	1
Florida.....	11	North Carolina.....	13
Georgia.....	8	New York.....	1
Illinois.....	2	Oklahoma.....	4
Indiana.....	2	Pennsylvania.....	3
Kansas.....	3	South Carolina.....	7
Louisiana.....	1	Tennessee.....	4
Michigan.....	10	Texas.....	7
Maryland.....	4	Virginia.....	10
Delaware.....	1	West Virginia.....	4

Only 23 Were Approved

Of these 124 hospitals, 23 were fully approved by the American College of Surgeons and three were provisionally approved. Of the approved hospitals, nine were approved by the Council on Medical Education and Hospitals of the American Medical Association for the training of interns. Seven were approved for residencies and two, for graduate training in surgery or a surgical specialty. Schools of nursing were conducted in conjunction with 20 of these hospitals. As can be seen, the majority of Negro hospitals are located in the South. Most of the approved hospitals also are located in this region.

The institutions in the North are located in a few large cities. While they render service in their respective Negro communities, other hospitals in these cities admit colored people and there is no legal segregation of white and Negro patients.

The bulk of the Negro population is concentrated in the South and, because of the social structure of this region, more institutions for colored people are found in this section. This is not to say that Negroes are refused admission to some white southern hospitals but merely that these admissions are generally confined to teaching or governmental institutions or to the segregated wings of subsidized voluntary hospitals.

*Abstracted from *Modern Hospital*, August 1945.

The relation of the colored population to the white population presents an interesting study, for it is here that one will get an idea of the health and hospital problem of the South. The Negro constitutes approximately 31 percent of the population of this region, or 9,904,619 out of a total population of 31,658,578.

In comparison with other States, Georgia presents an illustrative example. This State has a total population of 3,123,723 of which 2,038,278 are white and 1,084,927 are Negro (other colored not included). In 1944 Georgia had only 41 hospitals approved by the American College of Surgeons and none of these was Negro, while Wisconsin, with a total population of 3,137,587, had 81 approved hospitals, all of which admit Negro patients without segregation.

These figures are not given as a statistical review but to show the importance of the Negro hospital in the South. The social tradition of the South does not permit the grouping of white and colored patients, nor does it permit (with few exceptions) the training of colored medical personnel in white hospitals. The colored nurse must be trained and this instruction must be received in separate institutions.

The Negro physician must be in a position to treat his patients. By virtue of the fact that he is not allowed to practice in white hospitals, the colored hospital offers him his only opportunity.

WITHIN BOOK COVERS

Words of wisdom define the objectives and
direct the pathways of progress

Preventive Medicine and Public Health. By Wilson G. Smillie, A. B., M. D., D. P. H., Sc. D. Publishers: The Macmillan Co., New York. (1946.)

The author of this new book on an old subject—in terms of health problems and health progress—wisely has selected from his extensive training and experience only the most objective phases of one of the most ponderable of human studies. Taking inspiration and incentive from Lemuel Shattuck, who as early as 1850 had a vision of what preventive medicine and public health should be and do, the author places primary emphasis on the importance of the practicing physician in the promotion of individual, family, and community health.

Whereas the larger part of older textbooks on hygiene is devoted to environmental sanitation, this new text presents the modern point of view in medical education, "that preventive medicine is an essential part of clinical medicine." Clinical experience and case histories, rather than abstract sanitary engineering and statistical computations, are the sources of the vital materials which the author of this new volume uses most effectively.

The text is organized and presented in six major sections. Section I gives a brief introduction and chapters on population trends and vital statistics. Section II discusses the importance of environmental sanitation in relation to health and disease. One chapter considers housing as a factor in the maintenance of good health standards.

Communicable disease control (Section III) presents the general principles of epidemiology, with application in the control of the major infections in childhood and adult life. Section IV is devoted to child hygiene and Section V to adult health protection and promotion.

In Section VI, the author gives a brief summary of his *Public Health Administration in the United States*, a standard work in this field.

Two significant quotations from the text relate to the important and timely topics—medical care and health education:

"One of the most useful reforms which could be introduced into the present constitution of society would be that the advice of the physician should be sought for and paid for while in health, to keep the patient well, and not, as now, while in sickness, to cure disease, which might in most cases have been avoided or prevented."—Lemuel Shattuck.

"One of the most important functions of the practicing physician is as a health educator. Most doctors are not conscious of this fact. They consider health education to be the function of a specially trained technician in public relations . . .

"Every bedside that is visited, every house that is entered by a physician, gives an opportunity for effective health education . . ."

The illustrations of the text are well selected and well placed in relation to the subject matter. Each chapter has its own list of references and suggested reading.

Useful to all public health workers, this textbook with a new point of view, is *must* reading for the practicing physician.

A Future for Preventive Medicine. By Edward J. Stieglitz, M. D., F. A. C. P. Publishers: The Commonwealth Fund, New York. (1945.)

This monograph is another study of The New York Academy of Medicine Committee on Medicine and the Changing Order, established by the Council of the Academy in 1942.

To properly orient this series of studies, the following paragraphs are quoted from the *Foreword* of the current study:

The Council's instructions to the Committee were to review the nature, quality, and direction of the economic and social changes that are taking place now and that are to be anticipated in the immediate future; to define in particular how

these changes are likely to affect medicine in its various segments; to determine how the best elements in the science and art of medicine and in its service to the public may be preserved, embodied, and extended in whatever new social patterns may ultimately appear.

The objectives of the Committee were defined as follows:

To explore the possibilities and to formulate methods of maintaining and improving standards of quality in medical service, including medical research, medical education, the maintenance of health, both physical and mental, the prevention of disease, and the treatment of disease.

To study the means of making available to larger groups of people and to the country as a whole the best known practice in preventive and curative medicine.

To explore the possibilities and to formulate proposals of distributing these services not only to a larger number but also at a lower per capita cost than the present system permits.

The Committee was composed of physicians, representatives of the allied professions of dentistry and nursing, and laymen. The physicians were chosen because of their special interest and experience in medical education, public health, or social medicine and welfare, as well as for their wide experience in the practice of medicine. Membership was not restricted to physicians who were Fellows of the Academy.

Since laymen, as the recipients of medical service, are vitally concerned in its development and distribution, it was considered important to have them represented on the Committee. Members from the laity were therefore selected, representing labor, industry, law, social work, and the clergy. The individuals chosen were those particularly interested in the problems of health, preventive medicine, and social welfare.

The Committee's work has involved a number of concurrent activities. It has held weekly meetings at which experts from such varied fields as economics, politics, industry, labor, medicine, dentistry, the hospitals, nursing, and social work, addressed the Committee, presenting in their discussion the basic data of their respective interests and interpretations of the significant social and economic changes that were being witnessed and that could be anticipated. . . .

This treatment of the subject matter brings to light not only the achievements but also the inade-

quacies in present-day medical practice—the uneven development of its different sectors, the prevailing incongruities and irrationalities, as well as the lag in the adjustment of medicine to the social needs of today. The monographs therefore offer not only a survey of the present situation but also an analysis of how it came to be and some indications as to future trends.

In addition to the monographs, the Committee will issue a report, representing the conclusions drawn from its deliberation and studies. . . .

The title of Dr. Stieglitz's interpretation of present trends is *a future* rather than *the future* of preventive medicine, thus recognizing that medicine is at the cross roads and that the determination of the right direction of progress has not yet been achieved.

The introduction observes that "the history of man and his institutions has shown repeatedly that the greater innovations of thought in science, industry, government, and religion have arisen during periods of stress. Stress makes for change and activity; a stable environment makes for stagnation.

The practice of medicine has been changing, but its metamorphosis is certain to be accelerated by the world-wide social cataclysm of war. The practice of medicine has not kept pace with the phenomenally rapid developments of the science of medicine. For orderly progress the lag between knowledge and application must be kept at a minimum, though some delay is inevitable.

The author considers preventive medicine more than merely the prevention of disease. To him it means—and to others it should mean—the attainment by the individual of optimum development and performance.

This concept is advanced in the text of the study under the chapter titles, Definitions, Health Over the Last Forty Years, A Program for Preventive Medicine, and Summary. In the limited content of these chapters there is conviction and challenge, encompassed in the need for special emphasis on such aspects of life and living as: (1) normal human biology, structure, and function; (2) wise nutrition; (3) eugenics; (4) preventive medicine, its accomplishments, techniques, and objectives; (5) effects of senescence; (6) mental hygiene; (7) hazards (personal and socio-economic) of insidious chronic disease in later years; and (8), last but not least, personal responsibility for health maintenance as an obligation to family and society as

well as self, and a corollary to the privilege of health.

The concluding thought is that medical science can give health to no one, but it is becoming more competent in guiding those who wish to *earn* health.

A number of tables and graphs illustrate the text. A comprehensive list of references is appended.

All leaders of current thought who are—or should be—interested in the tomorrow of people confused today by wartime experience and post-war complications would do well to use this series of monographs as a guide to clear thinking and resolute action.

"Then men will live long enough, deep enough and wide enough to think. That might even mean lasting peace. This goal is worth any effort."

Health Activities. By Julia C. Foster. Publishers: J. B. Lippincott Co., Philadelphia. (1946.)

This textbook (or better, workbook) for classroom teaching of high school boys and girls was prepared by a teacher who ably combined subject matter with practical experience. She has presented a new activity program of *learning while doing*. The content is adequate for its purpose and it is functional, relating health problems to everyday, healthful living.

There are 10 large units, each of which is divided into specific health problems—44 in all. These units are: (1) Your Health and Personal Appearance; (2) Additional Aids to Your Appearance; (3) What You Should Eat and Why; (4) How Your Body Functions; (5) Your Mental Attitude; (6) Community Health Problems; (7) Common Diseases; (8) Safety and Your Health; (9) Influences of Heredity, Environment; and (10) Getting Along with People. The problems are simply stated and stimulating to the student's natural curiosity.

The many good illustrations, the type forms and page layout, and the general organization of the text and visual aids for sustained interest and progress are notable and commendable.

Any teacher will find helpful information and

suggestions for the improvement of the health of her students and for understanding of the home—school—community triangle, of which the school, important as it is, represents only one area.

Within the covers of this economical workbook is a *teaching technic* and a *learning method* that should be in every teacher's possession.

Five in the Family. By Dorothy Baruch, Elizabeth Montgomery, and William S. Gray. Publishers: Scott, Foresman and Co., Chicago. (1946.)

This gaily illustrated, 4-color, health primer is designed to meet the needs of the third grade pupils. It is one of the new Curriculum Foundation Series, and is designated Health and Personal Development Book C. Its companion books are *Good Times* and *Three Friends*.

The authors present in attractive dress and convincing manner their planned conception of basic teaching of health, safety and personal development. The story is one of father, mother, and three children, and the true-to-life episodes which occur in their daily lives in the home and in the relationships of the neighborhood.

Taking an experience cycle of one birthday to the next, the progressive treatment of the many units of study considers all of those important habits and events which *integrate the personality* and make it *socially adaptive and agreeable*. Food, clothing, rest, play, medical and dental supervision, behavior guidance and personal adjustment, group participation, safety education—all of the *what to be and how to do* in children's growth and development, are arrayed in attractive, interesting, and effective patterns.

Especially good are the visual presentations. Even without the context, there is a progressive picture story that is motivating in color and action, and effective in the faithful and accurate interpretation of health information.

The teacher and the parents of the smaller children have in this health-story-book a useful medium for health education in palatable and nutritious form for this age-group which learns faster from what it sees and does than from the spoken or written word.

NOTE.—Books contributed by authors and publishers for review are respectfully acknowledged. Other reviews will appear in subsequent numbers of the *NEWS*.

Negro and White Mortality and Expectation of Life*

TABLE 1.—Expectation of life at selected ages for Negro and white males and females, 1929-31 and 1939-41¹

Age	Negro				White			
	Male		Female		Male		Female	
	1929-31	1939-41	1929-31	1939-41	1929-31	1939-41	1929-31	1939-41
	Expectation of life (years)							
At birth.....	47.55	52.26	49.51	55.56	59.12	62.81	62.67	67.29
10.....	44.27	48.34	45.33	50.75	54.96	57.03	57.65	60.85
20.....	35.95	39.52	37.22	42.04	46.02	47.76	48.52	51.38
30.....	29.45	32.05	30.67	34.40	37.54	38.80	39.99	42.21
40.....	23.36	25.06	24.30	27.19	29.22	30.03	31.52	33.25
50.....	17.92	19.06	18.60	20.95	21.51	21.96	23.41	24.72
60.....	13.15	14.37	14.22	16.10	14.72	15.05	16.05	17.00
70.....	8.78	10.11	10.38	11.82	9.20	9.42	9.98	10.50
80.....	5.42	6.58	6.90	8.02	5.26	5.38	5.63	5.88

¹ From life tables prepared by the Bureau of the Census. (See references 1 and 2.)

TABLE 2.—Negro and white mortality from all causes in separate States

State and section	Negro population	Proportion of colored population that is Negro	Mortality from all causes			State and section	Negro population	Proportion of colored population that is Negro	Mortality from all causes		
			Crude 1939-41	Age-adjusted ¹ 1940					Crude 1939-41	Age-adjusted ¹ 1940	
				Negro	Non-white					White	Negro
Number	Percent	Rate per 1,000			Number	Percent	Rate per 1,000				
New England	101,509	93.9	14.2	² 15.3	10.1	Southeast—Continued					
Maine.....	1,304	48.6	² 19.7	9.2	10.2	West Virginia.....	117,754	99.9	13.9	17.4	10.2
New Hampshire.....	414	77.4	16.1	20.7	10.0	North Carolina.....	981,298	97.7	11.7	15.2	10.1
Vermont.....	384	90.4	18.2	10.2	10.3	South Carolina.....	814,164	99.8	13.3	17.8	10.8
Massachusetts.....	55,391	93.7	14.3	14.6	10.2	Georgia.....	1,084,927	99.9	13.6	16.8	10.3
Rhode Island.....	11,024	95.5	16.3	17.9	10.4	Florida.....	514,198	99.8	14.5	17.9	10.4
Connecticut.....	32,992	97.5	13.2	15.4	9.7	East South Central	2,780,635	99.9	13.7	³ 16.4	10.2
Middle Atlantic	1,268,366	97.4	13.9	² 17.3	10.7	Kentucky.....	214,031	99.9	18.2	17.3	10.2
New York.....	571,221	95.3	12.7	16.2	10.7	Tennessee.....	508,736	99.9	15.0	16.8	10.2
New Jersey.....	226,973	99.1	14.9	17.5	10.4	Alabama.....	983,290	99.9	13.5	16.8	10.4
Pennsylvania.....	470,172	99.4	14.9	17.9	11.0	Mississippi.....	1,074,578	99.7	12.3	15.0	10.1
East North Central	1,069,326	97.4	15.0	² 16.9	10.0	West South Central	2,425,121	97.2	12.3	³ 14.8	9.9
Ohio.....	339,461	99.5	15.2	16.7	10.1	Arkansas.....	482,578	99.8	10.6	12.6	9.1
Indiana.....	121,916	99.5	15.9	16.6	10.1	Louisiana.....	849,303	99.7	13.3	16.0	10.9
Illinois.....	387,446	98.6	15.9	17.3	10.3	Oklahoma.....	168,849	72.7	12.6	14.1	8.9
Michigan.....	208,345	96.2	12.7	15.8	10.0	Texas.....	924,391	99.7	12.2	14.6	10.3
Wisconsin.....	12,158	49.0	13.9	17.6	9.1	Mountain	36,411	21.3	16.8	³ 17.1	10.6
West North Central	350,992	86.6	16.6	³ 16.5	8.8	Montana.....	1,120	5.9	24.4	15.8	10.0
Minnesota.....	9,928	42.6	15.9	15.4	8.7	Idaho.....	595	10.7	20.7	15.1	9.8
Iowa.....	16,694	95.0	15.7	15.1	8.5	Wyoming.....	956	23.1	23.4	19.3	9.6
Missouri.....	244,386	90.6	17.0	17.3	9.6	Colorado.....	12,176	72.5	19.4	16.0	10.2
North Dakota.....	201	1.9	34.8	15.8	8.4	New Mexico.....	4,672	11.8	15.4	8.5	12.0
South Dakota.....	474	2.0	35.4	15.4	7.9	Arizona.....	14,993	20.7	13.0	14.9	12.5
Nebraska.....	14,171	77.8	14.3	14.6	8.4	Utah.....	1,235	16.7	20.8	12.6	10.0
Kansas.....	65,138	97.9	15.7	14.6	8.5	Nevada.....	664	10.7	32.1	22.5	12.4
South Atlantic	4,698,863	99.4	13.8	³ 17.4	10.5	Pacific	134,295	37.0	14.1	³ 14.5	10.1
Delaware.....	35,876	99.7	17.2	19.6	10.2	Washington.....	7,424	19.5	21.5	18.0	9.8
Maryland.....	301,931	99.7	16.3	19.0	11.0	Oregon.....	2,565	18.4	18.6	17.7	9.5
District of Columbia.....	187,266	99.2	15.8	18.6	11.6	California.....	124,306	40.0	13.6	13.6	10.2
Virginia.....	661,449	99.9	15.5	18.0	10.6	United States	12,865,518	95.6	13.7	³ 16.5	10.2

¹ Adjusted rates for States are taken from Vital Statistics—Special Reports, vol. 23, No. 1 (4). Rates are adjusted to the age distribution of the population of the United States as enumerated in 1940.

² Rates in italics are based on small numbers.

³ Adjusted rates for the United States and for geographic sections are Negro.

*Tables from "Negro Mortality From All Causes", Public Health Reports, February 22, 1946, Vol. 61, No. 8.

OTHER ITEMS OF INTEREST

Principles Governing School Lunches

A Committee Report

The Joint Committee of the National Education Association and American Medical Association, at its 1945 meeting in Chicago, adopted the following statement and authorized its publication immediately upon receipt by any interested publication.

The Joint Committee affirms the following fundamental principles governing the school lunch:

First, that the school lunch, contributing as it does to the child's nutrition, is a fundamental factor in the general health of that individual and, therefore, necessarily becomes a part of the school health program and, therefore, of the educational program as a whole.

2. The school lunch inevitably contributes positively or negatively to the child's education and, therefore, constitutes a vital part of the child's educational experience.

3. Since many pupils, especially in rural areas served by consolidated schools, live too far from school to go home for lunch and many children of working parents eat lunch away from home, the school lunch occupies a place of great importance.

4. The school lunch should be planned primarily for its nutritional and educational significance and should not be used as a means of making profit for the school or for a concessionaire. In some instances where children cannot pay the full cost of their lunch, arrangements must be made for feeding certain children free. In other instances, all children may have to be fed at a deficit, which may have to be met from outside funds or by the utilization of available foods (surplus, or donations) for which no payment in cash needs to be made.

5. Because of its nutritional and educational implications, the school lunch should emphasize foods of fundamental nutritional importance. Candies and soft drinks are not in themselves objectionable unless emphasized at the expense of basic foods or unless they are exploited for profit.

6. The sanitation of the school lunch is important because of the immediate harm that can result from contaminated, spoiled or infected food. Even when no demonstrable catastrophe

occurs, the slovenly or unsanitary handling of food is an unfavorable educational experience for those who participate in the serving or consumption of food under unsatisfactory or other undesirable conditions. The sanitary requirements for school lunches have been set forth by the Joint Committee in another publication entitled "Sanitary Requirements for School Lunches."

7. In view of the educational significance of the school lunch, the Joint Committee believes that regardless of the source of funds, food supplies or other contributions, the administration of the school-lunch program should be a function of the department of education, with sanitary supervision by the department of health. Financial aid from outside sources should be made available under conditions which do not interfere with local control of the projects to meet local needs.

8. Every advantage should be taken of technical assistance available, from State or Federal sources if such technical assistance is not available locally. Continuous efforts are necessary to provide more trained persons for work in connection with school lunches.

9. The popular principle of a hot dish with the school lunch does not in itself assure a significant contribution to the child's nutrition unless the hot dish is composed of foods which tend to make a balanced diet when eaten in conjunction with the customary box or pail lunch, consisting of sandwiches and dessert. In certain localities and at

certain times of the year a fruit or vegetable salad would be far more valuable than merely serving a hot dish.

It is suggested that the Governing Council of the American School Health Association make the following recommendations to the authorities indicated:

I. Congress—

1. That the appropriations for school lunches be continued.
2. That the funds be administered in such a way as to simplify utilization of such funds by the local school.
3. That a suitable fund be ear-marked for appraising the value of the school lunch.
4. That the policy be to give assistance to schools needing assistance but to avoid coercion of school authorities to use Federal funds where local feeding programs are already functioning satisfactorily.
5. That Federal authorities administering the school lunch fund encourage the use of the school lunch for the direct teaching of better food habits among school children.
6. That some provisions be made for permitting smaller schools, not having adequate physical facilities, to benefit from Federal funds—for example, central kitchens with truck delivery.
7. That the entire program be less rigid and more flexible to fit the individual needs of various communities.
8. That Federal funds be used to demonstrate to the community the effectiveness of school lunch programs and that communities be encouraged to finance their own programs when they become convinced that such money is well spent.
9. That a long-range plan of Federal participation be established and guaranteed in-so-far as possible and that Federal assistance gradually and systematically be reduced instead of increased.

II. To the Surgeon General of the United States Public Health Service—

1. That the U. S. Public Health Service develop, study and evaluate methods for making rapid nutrition appraisals of school children and make these findings available to health departments throughout the country.
2. That the U. S. Public Health Service, through all available channels, encourage State and local health departments to study the nutrition status of school children in their respective areas and

cooperate closely with educational and agricultural groups in making the best possible use of the findings.

It is further recommended that the Governing Council of the American School Health Association go on record as favoring:

1. A practical course in nutrition for teachers in training.
2. More training in the practical and medical aspects of nutrition of children for school and public health physicians and nurses.
3. More attention to appraising nutrition status of children during physical examinations and inspections.
4. More research on the relation of nutrition to the physical and mental status, efficiency, and learning ability of the school child.
5. Incorporation of practical nutrition training in the teaching programs of all elementary and high schools.—(*The Journal of School Health*, March, 1946.)

Help for St. Elizabeth's Hospital, Houston, Texas

Completion of St. Elizabeth's Hospital for Negroes is something that affects everyone in this community. For the health conditions of every group in a community affect every resident of it.

Houston has a Negro population in excess of 100,000. These people work with and for white people, ride in the same busses and elevators, the members of the races coming in daily contact. The people of one race cannot maintain health unless both races are healthy.

Hospital facilities for Negroes here are critically inadequate. The new hospital is needed now and should be finished as quickly as possible. It is a \$425,000 project and there is \$45,000 yet to be raised. There is no organized campaign to raise the funds, but contributions are being received by a committee headed by Noah Dietrich, executive vice-president of the Hughes Tool Company.

A large proportion of the funds already in hand was donated by local Negroes. Gifts have come from organizations, foundations, and individuals of both races.

The hospital is located in the 4500 block of Lyons Avenue and will be organized and directed by the Sisters of the Immaculate Conception. The institution will include a school for the train-

ing of young Negro women as nurses.—(*Chronicle*, Houston, Texas, May 11, 1946.)

Tuberculosis Officer Cites Negro Death Rate, Milwaukee, Wisconsin

The Milwaukee Negro population has a death rate of 167 per 100,000 each year from tuberculosis, Will Ross, president of the National Tuberculosis Association, told members of the Milwaukee Come Back Club at their third annual dinner-meeting at the City Club. The club is composed of persons who have been cured of tuberculosis.

The annual tuberculosis death rate of the entire city, Negroes included, is only 35 per 100,000, Ross pointed out. He urged the more than 150 "graduates" of tuberculosis sanatoria present to promote legislation aimed at improving housing conditions for Negroes in Milwaukee.—(*Journal*, Milwaukee, Wis., May 19, 1946.)

National Tuberculosis Association Fellowship Awards

The Committee on Negro Program of the National Tuberculosis Association announces the following fellowship awards in tuberculosis and health education, which are made annually to Negro nurses, teachers and health education workers, for the summer session at the University of Michigan's School of Public Health. The cost of these fellowships is borne by the National Tuberculosis Association on a matching basis with State and Local associations.

Regular Fellowships

The recipients of the eleven regular fellowships awarded by the Committee on Negro Program are: Mrs. E. P. Jones, State Itinerant Teacher Trainer, Tallahassee, Florida; Mr. C. C. Washington, School Principal, Panama City, Florida; Mr. William H. Hatton, School Principal, Avondale Estates, Georgia; Mrs. Odessa Wesley Wilson, Supervisor Negro Schools, Union Parish, Louisiana; Mrs. E. P. Wilson, teacher, High Point, North Carolina; Mr. C. R. Johns, School Principal, Seminole, Oklahoma; Miss Alice B. Ballard, county tuberculosis nurse, Greenwood, South Carolina; Mrs. Katie Belle Haynes, public health

nurse, Knoxville, Tennessee; Mrs. Emma Greene Pleasant, teacher, Houston, Texas; Mrs. Geneva K. Watson, teacher, Charlottesville, Virginia; Miss Mary E. Willis, school nurse, Richmond, Virginia.

Special Staff Training Fellowships

Five fellowships made possible by the use of funds from the Special Staff Training Budget of the NTA have been awarded to: Mrs. Dannie E. Stone, health education worker, Dade County Tuberculosis Association, Florida; Miss Harriet Peat, Negro health educator, Maryland Tuberculosis Association; Mrs. Mary Etta Mason, education and rehabilitation worker, Forsyth County Tuberculosis Association, North Carolina; Mrs. Julia G. Ray, health education worker, Buncombe County Tuberculosis Association, North Carolina; and Mrs. Josie Hazel, college health education worker, South Carolina Tuberculosis Association.

Special Fellowships

Two special fellowships were awarded this year. Miss Sylvia Davis, health education worker with the Columbus Tuberculosis Society in Ohio, will attend the summer session at the University of Michigan, and Miss Dorothy Ury, a teacher in Atlanta, Georgia, will take the public health course at the North Carolina College for Negroes in Durham, North Carolina.

Awards Made by State and Local Associations

The following students received fellowships from State and Local Associations independent of the National Association: Miss Sue Swain, Louisville Tuberculosis Association, Kentucky; Mrs. Faye Dinwiddie, Toledo Public Health Association, Ohio; Mrs. Mary S. Buford, Oklahoma Tuberculosis Association; Mrs. Hannah B. Mann, Miss Minnie P. V. Mansfield, and Miss Arminta S. Martin, Pennsylvania Tuberculosis Association; Miss Lorine F. Knight and Miss Corneith York Russell, Tennessee Tuberculosis Association; Mrs. Gwendolyn Griffin, Arlington Tuberculosis Association, Virginia; Miss Rosa Lewis, Powhatan Tuberculosis Association, Virginia; and Mrs. Helen Mitchell, Suffolk-Mansemond Tuberculosis Association, Virginia.

The Ohio Public Health Association also is sending a student to Michigan on fellowship but

the name of this candidate has not yet been announced.

Negro Doctors to Serve in Veterans' Hospitals

Dr. Paul R. Hawley, Veterans' Administration medical director, reports that the way has been cleared for appointment of Negro doctors in veterans' hospitals, with local custom to be the ruling factor in appointments. He is considering

plans to set up all Negro units in a number of hospitals with Negro patients to be attended by Negro doctors and nurses. Dr. Hawley reports that 152 full-time resident physicians are now on duty in eight veterans' hospitals.

The House Military Affairs Committee has voted favorably on a bill to permit retired officers to work as physicians, executive and hospital managers for the Veterans' Administration without affecting their retired status.—(*Journal of the American Medical Association*, March 23, 1946.)

TUBERCULOSIS MORTALITY

TABLE 1.—DEATH RATES FOR TUBERCULOSIS (ALL FORMS), BY RACE AND SEX: DEATH-REGISTRATION STATES, 1910-1943

[Rates per 100,000 population]

Year	Total	White			Nonwhite			Year	Total	White			Nonwhite		
		Total	Male	Female	Total	Male	Female			Total	Male	Female	Total	Male	Female
1943	42.6	34.3	44.4	24.7	112.9	126.4	100.0	1926	85.5	72.0	76.4	67.5	223.8	221.5	226.1
1942	43.1	34.4	43.3	25.6	118.4	131.4	106.0	1925	84.8	71.6	75.8	67.2	221.3	215.8	226.7
1941	44.5	35.4	43.3	27.4	124.2	134.3	114.5	1924	87.9	74.9	79.3	70.4	218.6	215.0	222.3
1940	45.8	36.5	44.7	28.2	127.6	138.7	116.9	1923	91.7	79.5	84.4	74.5	213.1	206.3	220.0
1939	47.1	37.7	44.7	30.6	129.1	137.3	121.1	1922	95.3	82.6	87.5	77.4	218.9	216.6	221.2
1938	49.1	39.1	46.2	31.9	136.8	144.0	129.8	1921	97.6	84.7	89.1	80.2	239.3	233.7	245.1
1937	53.8	43.4	50.9	35.8	145.0	155.0	135.2	1920	113.1	99.5	104.1	94.8	262.4	255.4	269.6
1936	55.9	45.0	52.2	37.6	151.6	163.9	139.6	1919	125.6	110.9	121.1	100.4	284.0	275.5	292.7
1935	55.1	44.9	51.7	37.8	145.1	155.4	135.0	1918	149.8	134.3	153.2	115.4	346.0	351.0	340.9
1934	56.7	46.2	52.7	39.6	148.8	156.9	140.8	1917	143.5	129.6	138.4	125.7	322.7	322.3	323.0
1933	59.6	48.5	54.3	42.6	157.7	165.6	149.9	1916	138.4	125.7	141.3	109.5	322.7	322.3	323.0
1932	62.5	50.2	55.9	44.4	173.5	179.5	167.5	1915	140.1	128.5	144.0	112.2	401.1	420.2	380.5
1931	67.8	54.2	60.1	48.2	191.1	197.4	184.9	1914	141.7	130.3	146.9	112.9	396.7	417.8	374.0
1930	71.1	57.7	63.4	51.9	192.0	194.3	189.8	1913	143.5	132.6	147.7	116.7	386.5	401.9	369.9
1929	75.3	62.4	67.1	57.6	192.0	191.5	192.6	1912	145.4	136.0	149.4	121.8	429.0	459.9	394.5
1928	78.3	64.9	69.7	59.9	199.5	199.4	199.6	1911	155.1	145.0	157.5	131.9	461.4	484.8	435.2
1927	79.6	66.5	70.7	62.2	208.7	205.4	212.1	1910	153.8	145.9	158.2	132.8	445.5	479.3	406.8

Age-specific mortality rates by sex and race

The general form of the curves for tuberculosis mortality by age, sex, and race for 1943 is much like that found for previous years. The salient points may be seen in table 2 and figure 2. In practically every age group the rate for nonwhites is much higher than that for whites. The rates for males, especially among whites, increase continuously with age (except for the very young) while those for females reach a peak early in adult life. The peak in the curve on the chart for nonwhite females is much higher than that for white females, and occurs at ages 20 to 24 years, while those for white females occur later, in the 25 to 34 year age group and in the age group 75 years and over the latter being the maximum point in the curve. During the period of adolescence and young adulthood the rates are higher for females than for males. Around age 30, the curve on the chart for males overtakes that for females and remains much above it for the remainder of the life span. It may be noted that in 1943 the curves on the charts for males and females cross at ages 25 to 29. In previous years this occurred at ages 30 to 34. However, this may not represent a real shift in the relative rates. It is more probable that this is due to the apparent high rates for males in these ages, resulting from the use of the *de facto* population as a base.

(From "Tuberculosis Mortality in the United States in 1943", National Summaries, Vital Statistics—Special Reports, April 10, 1945.)

Progress Trophy Now Available

The PROGRESS TROPHY for achievement of the Gold Seal Certificate of Merit in three successive years of the National Negro Health Week observance is now available.

Communities and counties which are eligible may make application for details of this award.

Give name of city or county, the name of the sponsoring agency or organization, and the three successive years of the Certificate of Merit award.

The properly designated correspondent will be advised of the terms and conditions of the award.

Send application to: Dr. Roscoe C. Brown, Chairman, National Negro Health Week Committee, U. S. Public Health Service, Washington 25, D. C.

National Negro Health News

The National Negro Health News is a quarterly bulletin issued by the United States Public Health Service in the interest of the National Negro Health Movement.

The Health Week Follow-Up Number of the News contains selected articles on the objective of the current year's Health Week observance, "A Healthy Home in a Healthy Community: Health Education and Health Services," and other educational and informative material on the health of the Negro in the community and in the Nation.

Report of some of the Health Week achievements, statistical data, list of communities earning the Certificate of Merit and schools awarded the Certificate of Commendation will be published in the July-September issue of the News. Immediate transmittal of reports is urged in order that the summary in the next number of the News may include these communities and the sponsoring organizations.

It is requested that literature such as books and pamphlets, abstracts, news releases, programs of health studies, reports of health projects, and pictures of pertinent health activities be sent to the News for its information. Suggestions for improvement of the News will receive merited consideration.

Inquiries and suggestions should be sent to The Editor, National Negro Health News, U. S. Public Health Service, Washington 25, D. C.

Dr. Roscoe C. Brown, *Chief*,
OFFICE OF NEGRO HEALTH WORK.

EDITOR'S NOTE

This issue of the National Negro Health News has the interesting story of the unveiling of the bust and tablet of Booker T. Washington in the Hall of Fame for Great Americans; the West Virginia State College Health Education Workshop report; a selected bibliography of health education materials; a Negro hospital care appeal, and general and tuberculosis mortality tables.

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G. ST. J. FERROTT, *Chief of Division*



Approved by the Director, Bureau of the Budget, as Required by
Rule 42, of the Joint Committee on Printing

Words of Wisdom

"There is no defense or security for any of us except in the highest intelligence and development of all."—Dr. Booker T. Washington, founder of Tuskegee Institute.

A6

MARYLAND STATE
DEPARTMENT OF HEALTH
BALTIMORE

INSTRUCTIONS FOR THE CONTROL OF
COMMUNICABLE DISEASES
IN THE STATE OF
MARYLAND



ROBERT H. RILEY, M. D., DIRECTOR

**Instructions for the Control of Communicable Diseases
in the State of Maryland**

MENINGOCOCCUS MENINGITIS (Cerebrospinal Fever)

Principal Signs and Symptoms:

Onset sudden. Usual symptoms are fever, prostration, headache, vomiting, spastic and rigid muscles, the rigidity becoming more marked in muscles of neck and back.

Chief Source of Infection:

Discharges from mouth and nose.

Incubation Period:

Two to ten days.

Duration of Exclusion from School:

- (1) Patient:
During the clinical course of the disease and/or until the health officer is satisfied that the release of the patient will not endanger the public health.
- (2) Exposures:
 - (a) Those having had the disease—quarantine none.
 - (b) Those not having had the disease—quarantine none.

CHICKENPOX

Principal Signs and Symptoms:

Onset gradual. May be no symptoms. Usually there is feverishness, but this may be very mild.

Rash appears on second day as small raised spots, which shortly become filled with fluid; later scabs form. There may be successive crops of this rash up to the tenth day.

Chief Source of Infection:

Fresh or dry exudate from eruption on mucous membrane or skin.

Incubation Period:

Fourteen to twenty-one days.

Duration of Exclusion from School:

(1) Patient:

Six days after appearance of first crop of vesicles.

(2) Exposures:

(a) Those having had the disease—none.

(b) Those not having had the disease—daily inspection for twenty-one days after last exposure and exclusion on appearance of first symptoms.

DIPHTHERIA

Principal Signs and Symptoms:

Onset may be rapid or gradual. The early signs are: sore throat, with white grayish patches on the mucous membrane of the throat, palate or tonsils. There may be swelling of the glands of the neck, about the angle of the jaw.

Chief Source of Infection:

Discharges sprayed or expelled from the mouth or nose in coughing, sneezing or spitting, or even in talking.

Incubation Period:

Two to five days.

Duration of Exclusion from School:

(1) Patient:

To be excluded until two successive negative cultures are taken. The first of these cultures to be taken on clinical recovery. The health officer may, if he deems it advisable, terminate quarantine or isolation without cultures at the end of sixteen days after clinical recovery. If culturing is not practical, to be released without cultures sixteen days after clinical recovery.

DIPHTHERIA (Continued)**Duration of Exclusion from School (Continued)****(2) Exposures:**

(a) Exposed persons may be moved to a new address and return to school, provided they show two negative cultures from the nose and throat.

(b) Those who change their address must move to a home where there are no children.

All exposed persons are urged to receive temporary protection by an injection of antitoxin. Later, children under twelve years of age should procure permanent protection by immunization with toxoid or toxin-antitoxin.

Food-handlers must change their residence and have negative cultures from nose and throat before returning to work.

Remarks:

When more than one case occurs in a classroom, children in each classroom should have cultures taken from the throat and nose. When diphtheria occurs in a school reimmunization of children with toxoid, with parent's consent is urged. Culturing of school contacts is not indicated unless more than one case occurs in a classroom.

This disease varies greatly in its form. Mild cases are sometimes not recognized. They are, however, as infectious as severe cases, so that every precaution should be taken to detect them, and to prevent their contact with others.

GERMAN MEASLES**Principal Signs and Symptoms:**

Illness usually slight. Onset may be sudden. The rash is generally the first thing noticed. One of the characteristic symptoms is the enlargement of the glands on both sides of the neck. Unlike measles, there is no cold in the head, although the eyes may be inflamed and slight fever and sore throat may accompany the attack.

Chief Source of Infection:

Discharges sprayed or expelled from mouth or nose in coughing, sneezing, or even in talking.

Incubation Period:

Ten to twenty-one days.

Duration of Exclusion from School:**(1) Patient:**

To be excluded for seven days from onset of illness.

(2) Exposures:

(a) Those having had the disease—none.

(b) Those not having had the disease—daily inspection for twenty-one days after the last exposure by teacher or nurse and exclusion on appearance of first symptoms.

Remarks:

Peeling of skin in scales, flakes or large pieces after a case diagnosed as German measles should suggest scarlet fever.

INFANTILE PARALYSIS (Acute Poliomyelitis)**Principal Signs and Symptoms:**

Onset may be acute with fever and intestinal symptoms; it may be accompanied by a marked change in the habits and demeanor of the patient. Whereas he usually may be active and cheerful, he becomes quiet and listless and cries without apparent cause; paralysis may be first symptom observed. Pain on movement of neck and spine is an important diagnostic sign.

The paralysis is not always fully developed at onset, but may appear successively in different places. Paralysis in any given part of the body may be transient, lasting less than twenty-four hours, or it may be permanent.

Chief Source of Infection:

Discharges sprayed or expelled from nose, throat, or intestinal discharges.

Incubation Period:

Three to fourteen days.

Duration of Exclusion from School:**(1) Patient:**

During the clinical course of the disease. Probably not longer than fourteen days.

(2) Exposures:

(a) Those having had the disease—exclude from school for fourteen days from last exposure.

(b) Those not having had the disease—quarantine for fourteen days from last exposure.

Food-handlers and teachers are excluded from work for two weeks from last exposure to the disease.

Remarks:

There are undoubtedly many persons infected with this disease in whom neither paralysis nor weakness of muscular action occurs. These are abortive cases or carriers.

MEASLES**Principal Signs and Symptoms:**

Onset of the disease resembles a cold in the head, with fever, running nose, inflamed eyes, sneezing and coughing. The rash appears about the third day and consists of small irregular groups of dull red, slightly raised spots. They are usually first seen on the forehead and face and then rapidly spread over the entire body. Koplik's spots may be present in the mouth before the appearance of the rash.

Chief Source of Infection:

Discharges sprayed or expelled from nose or throat in coughing, sneezing, spitting, or even in talking.

Incubation Period:

Fourteen days.

Duration of Exclusion from School:**(1) Patient:**

To be excluded for seven days after the appearance of the rash, provided no abnormal mucous membrane discharge is present and fever has disappeared.

(2) Exposures:

(a) Those having had the disease—need not be excluded if they present a certificate certifying that they have had the disease at some past time.

(b) Those not having had the disease—may return to school fourteen days after the last exposure.

Remarks:

This disease is communicable from the very first sign of sickness, even before the rash appears.

Those who change their address must not go to a home where there are children.

MUMPS**Principal Signs and Symptoms:**

The onset may be sudden or gradual, beginning usually with a slight fever, pain and swelling in front of and below the ear. The jaws may be stiff, and the saliva sticky.

Chief Source of Infection:

Discharges sprayed or expelled from mouth or nose in coughing, sneezing, spitting or even in talking.

Incubation Period:

Eighteen days.

Duration of Exclusion from School:

- (1) Patient:
Until swelling of glands has disappeared.
- (2) Exposures:
(a) Those having had the disease—none.