

Sir Augustus West.—Appointed Brigade Surgeon on January 13, 1810, and Army Surgeon January 29, 1814, and Chief Surgeon of the Army May 17, 1817. Deputy Inspector-General November 18, 1824. He was in Brazil with Beresford in 1820; he was decorated with the Peninsular War medal and retired on February 14, 1826.

William Wynn.—Appointed in January, 1810: he was Surgeon at General Headquarters. Army Orders of September 9, 1813, praise his services during the last three years. He had at this date the rank of Brigade Surgeon and the title of Hon. Surgeon to His Royal Highness. He was promoted Army Surgeon January 29, 1844, and Deputy to the Chief Surgeon on December 17, 1815. He accompanied Beresford to Brazil in 1815. The rank of Deputy to the Chief Surgeon did not exist in the Portuguese Army, and I think that it was given to Wynn during his stay in Brazil. Wynn died on November 13, 1821. I believe that Wynn's family remained in Portugal. On September 20, 1834, John Beresford Nanny Wynn was admitted to Matriculation in the first year of the Surgical Course at the Hospital of St. Joseph. He was a native of Lisbon and the son of William and Isobel Wynn.

Westcott.—Brigade Surgeon in the month of August, 1815.

Current Literature.

MACGRAITH, B. G. The Diagnosis of Meningococcal Meningitis from the Spinal Fluid. *Lancet*, 1934, i, 17.

The author summarizes recent methods of identification of the meningococcus on which he has been working, and hopes they will be more fully investigated by others.

(1) METHODS OF IDENTIFICATION OF THE ORGANISM.

(a) The use of antimeningococcal serum agar plates.

Preparation of the Medium.—Five per cent antimeningococcal horse-serum made from Types I to III meningococci and free from preservative is added to a warm solution of 2.5 per cent agar, pH 7.6, just before the agar begins to solidify and plates are poured, about 15 cubic centimetres of the medium being used for each plate. The further addition of 3.5 per cent normal rabbit blood, laked with glycerin or water, at the same time as the serum makes a clear red medium on which the meningococci grow with great rapidity.

Method of Test.—The centrifuged deposit from the cerebrospinal fluid is smeared direct on the medium or else on to Dorset's egg medium and transferred later as a stab inoculation to the anti-serum agar plate, which is incubated for twelve to twenty-four hours at 37° C.

If the organism is a Type I-III a faint white halo will develop in the medium round the growth. Types II and IV have not yet been found to produce a halo.

(b) Direct slide agglutination of the organisms.

A fairly dense saline emulsion of the organisms is made from the anti-serum agar medium and is set up on slides against the four stock diagnostic rabbit anti-séra.

Incubation for 20 minutes at 37° C. under moist conditions is usually sufficient. Agglutination may occur in more than one serum, but usually one slide is more affected than the others. Slide agglutination is not always reliable as organisms on first isolation often fail to agglutinate.

(2) TESTS ON THE SPINAL FLUID DIRECT.

(a) Precipitation with antimeningococcal serum.

Technique.—Set up two rows of four Dreyer agglutination tubes and two control tubes. Four different dilutions of the spinal fluid are used, 1:1, 1:4, 1:16, and 1:64. Eight drops of fluid are added to each tube, the front and corresponding rear tube of each row receiving the same dilution of fluid. Into each of the four front row tubes place two drops of undiluted polyvalent anti-serum and into the rear row place two drops of serum diluted 1:4. Control tubes of undiluted spinal fluid and of undiluted serum are put up in saline. The tubes are shaken and the series incubated in the water bath at 37° C. from eight to twenty-four hours. Only definite precipitation is positive. Clouding without precipitation is not diagnostic. The second day of disease appears to be the earliest on which a positive precipitin reaction can be obtained.

(b) The fixation of complement by spinal fluids.

Spinal fluid when put up with polyvalent antimeningococcal horse-serum gives a positive complement fixation reaction. The spinal fluid was put up in dilutions of 1:1, 1:8, and 1:32.

A combination of the polyvalent precipitin reaction and the growth of the organism on animal serum-agar plates seems to be the quickest method of diagnosing meningococcal infections from the examination of spinal fluids.

H. T. FINDLAY.

BENSON, O. O., Jr. Tear Gas Taken Internally. *The Military Surgeon*. 1934, lxxiv, 96.

A white soldier, aged 27, with six years' service, who had attempted to kill himself in 1927 by shooting himself through the left temple with a revolver, again attempted to commit suicide by swallowing a one gramme gelatine coated capsule of chloracetophenone (tear gas). These capsules are marked with the letters "CN" and were mistaken by the man for "cyanide."

About five minutes after the capsule was swallowed severe epigastric

pain came on, followed by vomiting, the man writhing in pain on the ground. He was admitted to hospital in about twenty minutes and his stomach was washed out with about six gallons of water. The pain disappeared in about two hours, and the only abnormal sign was some congestion of the mucous membrane of the mouth and pharynx and of the conjunctivæ. The absence of general symptoms is considered to be due to the fact that chloracetophenone is insoluble in water and weak acids. The compound is soluble in alcohol and is destroyed by 60 per cent sulphuric acid and by a hot solution of sodium carbonate.

A. H. FLETCHER, F.A.P.H.A., and E. C. LINK. **Some Factors Involved in the Use of Chloramines for the Disinfection of Swimming Pools.** *American Journal of Public Health.* 1933, xxiii, No. 12, pp. 1255-1261.

Bacterial counts of the waters of swimming pools collected and tested in the usual manner are compared with those samples treated with antichlors to prevent the action of chloramine continuing during transit to the laboratory. It is recommended that one millilitre of 1.5 grammes of crystallized sodium thiosulphate per litre should be placed in sterile bottles, and the whole re-sterilized in an autoclave for five minutes at fifteen pounds pressure. The samples should then be collected in these bottles. Sodium thiosulphate was recommended as the best antichlor as it withstands sterilization.

The amount of sodium thiosulphate, while destroying the sterilizing effect of the usual quantity of chloramine (not exceeding one part per million) in swimming bath water, did not have any effect on the bacterial count. Certain extra tests and controls are required when swimming bath water is treated with chloramine: (1) A higher residual amount of chloramine (0.7 to 1 part per million) is required than with chlorine. (2) A control of the ratio of chlorine to ammonia is required, a dose of 4 to 1 is necessary for the first few days after refilling and then a ratio of 10 to 1 of ammonia. (3) The reaction of the water should be controlled. (4) All samples should be collected in bottles treated as above with sodium thiosulphate.

Copper sulphate in a proportion of 5 pounds to 100,000 gallons of water, added every second night, effectively checked algal and slime growths in the bath.

S. ELLIOTT.

VERNON, H. M. **The Temperature Gradients Induced by Various Heating Systems.** *J. Inst. Heating and Ventilating Engineers.* 1933, v. 1, 312-20, 4 figs. [15 refs.]

The author gives two reasons for avoiding a rising temperature gradient from floor to ceiling—the discomfort caused by this condition, and the extra loss of heat taking place through the upper parts of a building where the air under the ceiling is unduly hot.

A rule-of-thumb method that has been used to estimate the extra heat that should be provided to allow for this loss is shown not to hold good for all methods of heating, because some methods cause greater temperature gradients than others.

Figures and curves are given for a number of observations on different heating installations and the conclusion is reached that the best methods of heating by pipes or radiators is that where the ascending currents of warm air from the heating surfaces meet and balance descending currents of cool air from walls and windows. The worst systems are those in which powerful, hot convection currents ascend, unimpeded, to the ceiling. The remedies are to use heaters of greater length than height, to place radiators low down and under the colder parts such as windows, and perhaps to cover the tops of radiators with some kind of a baffle.

Warm air or "hot blast" heating systems are particularly liable to produce adverse temperature gradients, even if the inlets are placed low down.

In heating the rooms of dwelling houses closed coke or anthracite stoves give rise to steeper temperature gradients than open fires, coal or gas.

Low temperature panel heating is good in this respect and medium temperature panel heating (500° F.) less good.

T. C. ANGUS.

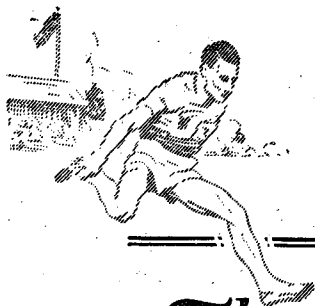
Reprinted from "Bulletin of Hygiene," Vol. 9, No. 1.

HOUGHTEN, F. C., and BLACKSHAW, J. L. **Indices of Air Change and Air Distribution.** *Heating, Piping and Air Conditioning.* 1933, v. 5, 324-30, 5 figs.

Although the significance of carbon dioxide concentration, *per se*, in the air of buildings, has long been recognized to be of negligible value as a standard of ventilation, the fact that this gas is evolved continuously and in known quantities by persons still makes it a valuable indicator of the general efficiency of ventilating systems to change and redistribute the air—thus indirectly giving us an indication of less easily measurable quantities, such as bacterial concentration and unpleasant odours.

The authors contend that as water vapour as well as CO₂ is given off in known amounts by the occupants of a room, and as it requires much less elaborate and more easily used apparatus to measure water vapour, measurement of the change of water vapour content of the air may well be substituted for that of CO₂ in routine ventilation work.

A chart (which can be used directly to determine the air changes actually taking place) is given, showing the CO₂ concentration, changes of water vapour content, and changes of dry and wet bulb thermometer readings produced in the air of inhabited spaces. It is shown that if at 70° F. dry bulb temperature a wet bulb temperature change of 0.4° F. can be more easily determined than a CO₂ change of 1 part in 10,000, the moisture

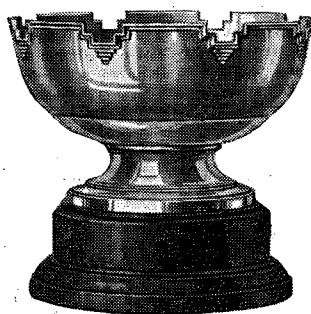


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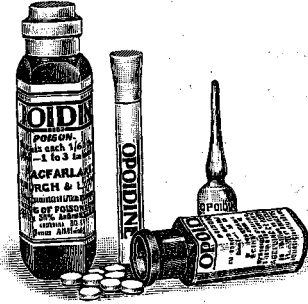
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content method is the better measure of air change or air distribution, assuming of course that the moisture dissipated to the atmosphere is retained therein to the same extent as the CO₂. This last provision is believed to be true except where some part of the enclosure (such as a window) is sufficiently cold to produce much condensation.

Tests in the psychometric chambers of the Research Laboratory of the American Society of Heating and Ventilating Engineers, Pittsburgh, show that a greater consistency of results is obtained by measuring the water vapour content than by measuring the CO₂ content.

T. C. ANGUS.

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Reviews.

REPORT OF THE SURGEON GENERAL U.S. ARMY TO THE SECRETARY OF WAR, 1933. Washington : U.S. Government Printing Office, 1933.

In the Annual Report, 1933, the Surgeon General deals with vital statistics for the year 1932, and with general matters pertaining to the Medical Service for the financial year which ended in June 1933.

The strength of the Army in 1932 was 131,925, there being 11,693 officers, 109,234 white enlisted men and 3,545 coloured enlisted men, the remainder being Filipinos and Puerto Ricans. Seventy-three per cent of the troops were stationed in the United States.

Health was satisfactory during the year, the admission rate being 680 per 1,000, compared with 651 in 1931 and 608 in 1930. An epidemic of acute respiratory disease, with a low mortality rate, in December, 1932, caused a considerable increase in the rate.

The main causes of admission to hospital were influenza (8,759), bronchitis (4,472), athletic exercise (3,386), gonorrhœa (3,348), acute tonsillitis (2,569), pharyngitis (2,508), rhinitis (2,460), chronic tonsillitis (2,376), falls (2,000), enteritis and colitis (1,821), cellulitis (1,570), and syphilis (1,509).

Admissions for venereal diseases (42 per 1,000) were the lowest ever recorded, but they are still the greatest cause of loss of time off duty. In China, with a strength of about 1,200 white enlisted men, the admissions for venereal diseases were 102 per 1,000.

For the last two years experiments have been made in the use of hexylresorcinol as a preventive of gonorrhœa, a 25 per cent solution being used, 33 per cent having been found to be too strong. This chemical has been found to be as effective as protargentum, and has the advantage that it does not stain clothing.

Malaria was responsible for only 616 admissions, the admission ratios in Panama being 31.9 per 1,000 and in China 90.8 per 1,000. The Medical