

Poisonous Gas in Warfare

APPLICATION, PREVENTION, DEFENSE, AND
MEDICAL TREATMENT

A SHORT, ANNOTATED BIBLIOGRAPHY OF GASES AND
KINDRED DEVICES APPLIED IN THE PRESENT WAR

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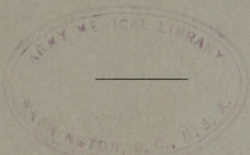
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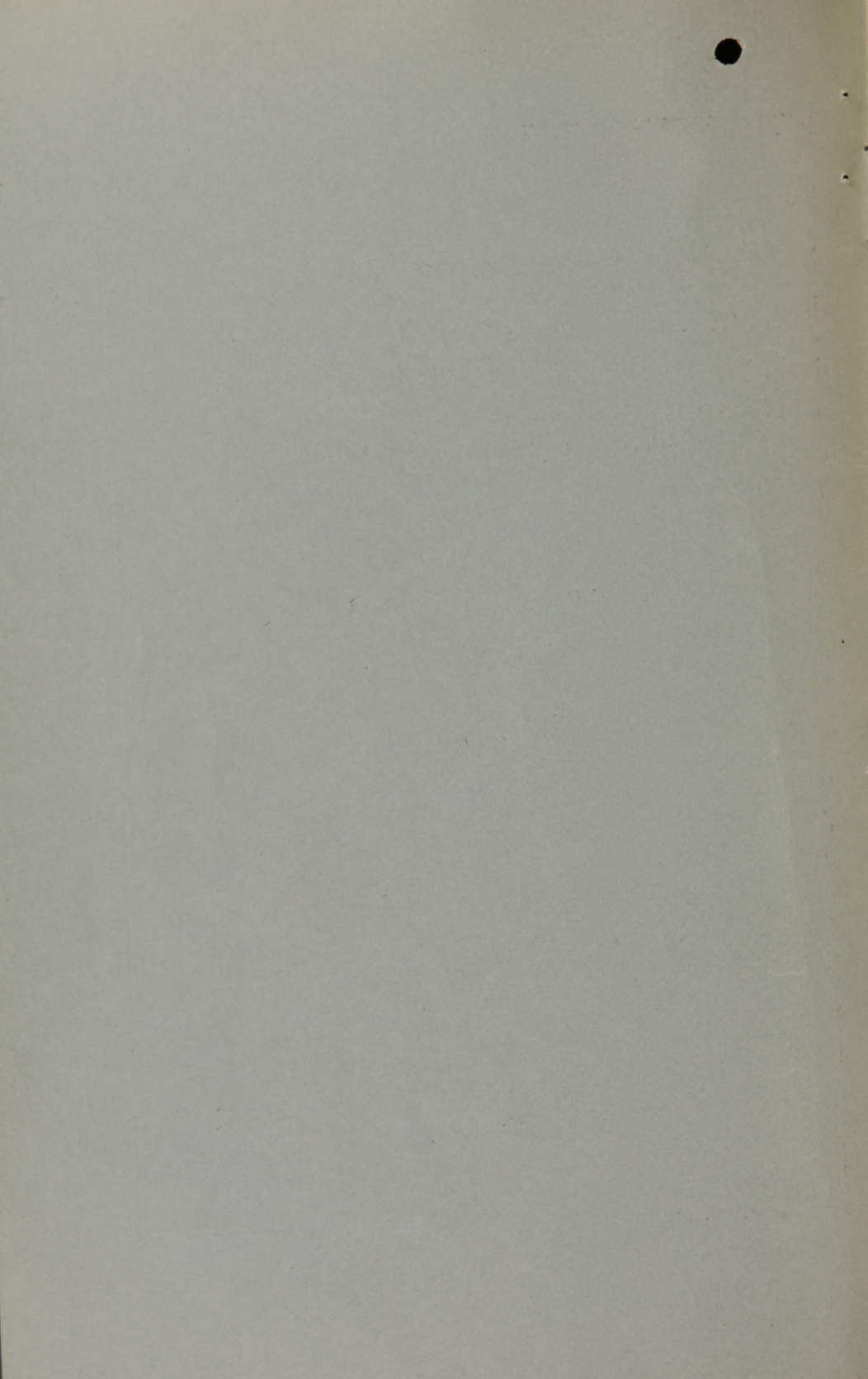
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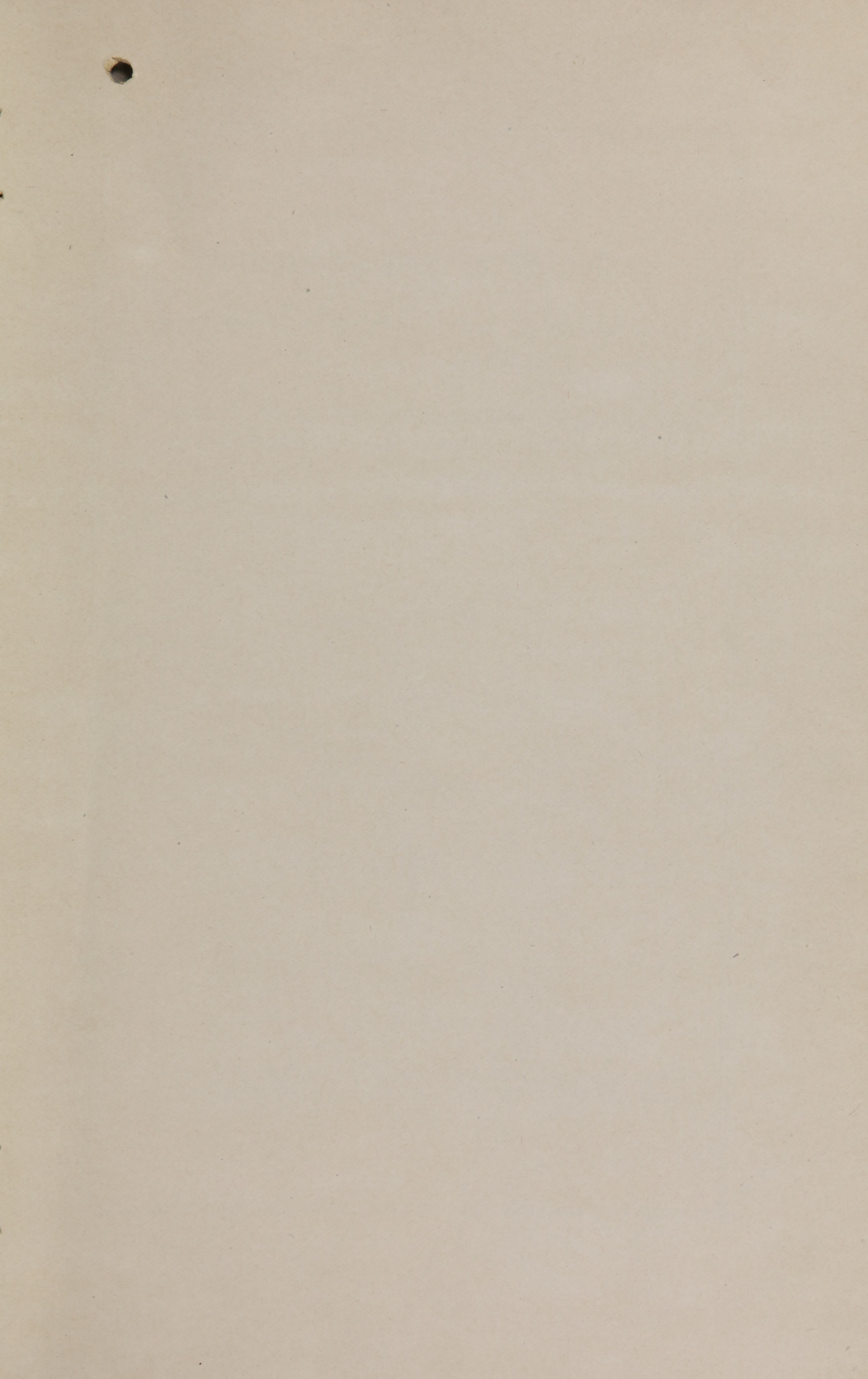
[OCTOBER 31, 1917]

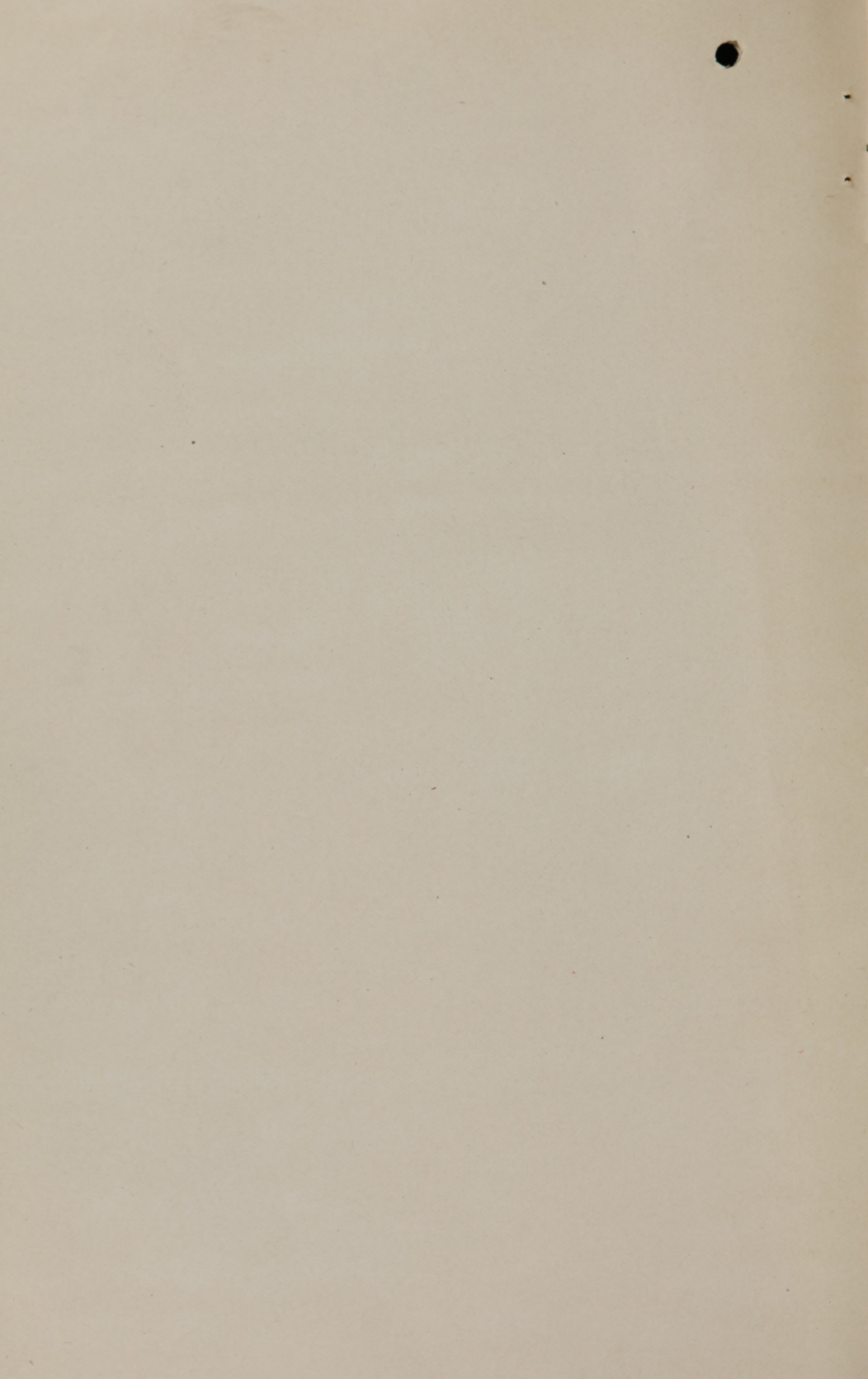
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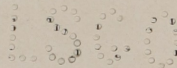
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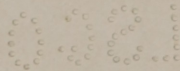
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APPLICATION, PREVENTION, DEFENSE, AND MEDICAL TREATMENT.

A SHORT, ANNOTATED BIBLIOGRAPHY OF GASES AND KINDRED DEVICES APPLIED
IN THE PRESENT WAR. PREPARED BY HENRY E. HAFERKORN, ENGINEER
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OCTOBER 31, 1917.

PREFATORY NOTE.

The titles entered in this list comprise the latest available material. The military entries are mainly based on the following publications, viz.

Monthly list of Military information carded from books, periodicals, and other sources in the Library, Army War College, Washington Barracks, D. C.

International Military Digest, New York.

Nearly every one of these articles has been examined and annotated when considered necessary.

They include, besides the accounts on Gas Poisoning, also such on kindred devices of modern warfare, as Flame Projectors, Bombs, Incendiary Projectiles, etc.

Titles appearing in brackets, thus [], are transcripts of the original language.

The numbers in the Index refer to numbers appearing above each entry of author or title.

The only abbreviations used are the following, viz:

AW: Army War College Library, Washington Barracks, D. C.

CA: U. S. Coast Artillery School Library, Fort Monroe, Va.

ES: Engineer School Library, Washington Barracks, D. C.

LC: Library of Congress, Washington, D. C.

SG: Surgeon-General's Office Library, 7th and B Streets, S. W., Washington, D. C.

IMD: International Military Digest.

The articles from a medical aspect have been kindly supplied by Mr. Felix Neumann, of the Surgeon-General's Office Library. They are not annotated as the titles are comprehensive in nearly every case, and because time was not available for the examination of each individual article. If, however, a new edition of this bibliography should prove desirable, such annotations will be added.

Officers requesting items entered in the Monthly list of the Army War College, will please give number of entry, and date of list, which will be found below the title of each entry filed in the Army War College.—H. E. H.

A. Books.

1

LAKE, B. C.

Knowledge for war. Every officer's handbook for the front. By Capt. B. C. Lake . . . Based on the War Office syllabus of training. London, Harrison & Sons. [1916 (?)] AW.

Gas warfare, p. 105-109. Smoke helmets, p. 107-108. Respirators, p. 108-109. Knapsack sprayers, p. 109.

Monthly List. . . . (Army War College) no. 10. July, 1916. Item no. 177.

2

MOSS, JAMES ALFRED.

Trench warfare. Being a practical manual for training and instruction of officers and men, based on latest information from the battle fronts of Europe. . . Menasha, Wis., G. Banta Pub. Co., c1917.

AW. ES. LC. 24419

Gas warfare, sec. 159-175. Helmets, sec. 166-169. Respirators, sec. 170-171. Knapsack sprayers, sec. 172-174. Liquid fire, sec. 175.

3

SMITH, JOSEPH SHUTER.

Trench warfare. A manual for officers and men. By J. S. Smith, 2d Lieut., with British Expeditionary Force. New York, E. P. Dutton & Co., c1917.

AW. ES. LC. 24416

Gas warfare, p. 113-118. Tear shells, p. 116-118. Gas masks, or respirators, p. 119-121.

4

U. S. NAVY DEPT., BUREAU OF MEDICINE AND SURGERY.

Report of the medico-military aspects of the European war from observations taken behind the allied armies in France. By Surgeon A. M. Fauntleroy, U. S. Navy . . . under the direction of the Bureau of Medicine and Surgery, Navy Dept., Washington, D. C. Washington, D. C., Govt. Print. Off., 1915. vii, 146 p. plates, ports., maps, plans, diags. 24cm.

AW. ES. LC. SG. 24421

vii, 146 p. plates, ports., maps, plans, diags. 24cm.

Asphyxiating gas, p. 26. Masks, fig. 47.—Gas-bacillus, infection, p. 77—Helmets, p. 121; fig. 180—Bombs, p. 29—Flame projectors, p. 28.

5

VICKERS, LESLIE.

Training for the trenches. A practical handbook. Based upon personal experience during the first two years of the war in France. By Capt. L. Vickers, Late Lieut., Seaforth Highlanders . . . New York, Geo. H. Doran co., c1917.

AW. ES. LC. 24418

Chap. ix. Gas and liquid fire, p. 97-100.

6

WALDRON, WILLIAM HENRY.

Elements of trench warfare. Bayonet training. By W. H. Waldron, Capt., 29th U. S. Infantry. New York, Edwin N. Appleton, 1917.

AW. ES. LC. 24415

Chap. ix. Gas warfare, p. 118-127. Helmets, p. 121-124. Respirators, p. 124-126. Knapsack sprayers, p. 126-127.

B. PERIODICALS.

- 7
- ACHARD, C.
 Sur l'asphyxie par les gaz toxiques des projectiles de guerre. Académie de
 Médecine, Paris. Bulletin. 3e série, v. lxxiii, 1915, p. 628-631. SG.
- 8
- AITCHISON, THOMAS.
 Gas poisoning. British Medical Journal, London. Sept. 25, 1915, p. 488-
 489. SG.
 Are chlorine gas and nitric peroxide poisonous?
- 9
- ANTIQUITY OF MILITARY ASPHYXIATION. Army and Navy Register, N. Y.
 v. 57, no. 1819. May 29, 1915, p. 683, 250 words. (Heading: News and
 comments). AW. CA. LC.
 I. M. D., Annual, 1915, p. 33.
- 10
- ASCOLI, M.
 Note cliniche sull' avvelenamento da gas asfissianti. Rivista Ospedal.,
 Roma, v. vi, 1916, p. 792-798. SG.
- 11
- ASPHYXIATING GASES. Information, N. Y. v. 1, 1915, p. 25-26. 760 words.
 ES. LC. 24315
- 12
- ASPHYXIATING GASES. In article: European war. Vatican. Information,
 N. Y. v. 1, 1915, p. 242. ES. LC. 24315
 Relates to Pope Benedict's letter to Cardinal Vannutelli, published in the
 "Osservatore Romano, the Vatican official organ, on May 26, 1915.
- 13
- ASPHYXIATING GAS IN THE TRENCHES. Review of Reviews, London. v. 56,
 July 19, 1917, p. 94-95.
- 14
- ASPHYXIATING GASES IN WAR. Birmingham Medical Review, Birmingham,
 Eng. v. lxxviii, 1915, p. 44-54. SG.
- 15
- ASPHYXIATING GAS IN WARFARE. Nature, London. v. 95, no. 2375. May 6,
 1915, p. 267-268. LC.
 This is a review of Dr. J. S. Haldane's report on his investigation of the nature
 and effects of the asphyxiating gases used by the Germans. . . . Professor
 H. B. Baker accompanied Dr. Haldane. . . .
- 16
- ASPHYXIATING GASES, PROTECTION AGAINST. Information, N. Y. v. 1, 1915,
 p. 26. 152 words. ES. LC. 24315
 Relates to a very cheap apparatus invented by Sir Hiram Maxim.

17

ASPHYXIATING GASES USED IN EUROPEAN WAR. Army and Navy Gazette, London. Feb. 12, 1916. 400 words. AW. LC.

Heading; The armies. Aircraft fights in the West.
I. M. D., Annual, 1916, p. 64.

18

AUBIGNY, P. D'

Nouvel explosif de guerre; la thermitite. Par P. d'Aubigny, Ingenieur de la Marine. La Revue (ancienne "Revue des revues"), Paris. xxvi année. vii. série, v. 61, nos. 10, 11. 15 Mai et 1er juin, 1915, p. 528-531. LC.

Invention of J. Hays Hammond. Incendiary shell, generating prussic acid gas.

19

BIELOFF, N. A.

[Poisoning with German asphyxiating gases.] Russkij Vrach, Petrograd. v. xiv, 1915, p. 730-732. SG.

20

BILANCIONI, G.

Alterazione anatomiche delle prime vie aeree e digerenti da gas asfissianti. Archivio Italiani Laringologia, Napoli. v. xxxvi, 1916, p. 143-169. 6 plates; the same. Archivio di Farmacologia Sperimentale e Scienze Affini, Rome, Italy. v. xxiii, 1917, p. 3-30. 3 plates. SG.

21

BLACK, J. ELLIOT, and others.

Observations of 685 cases of poisoning by noxious gases used by the enemy.

By J. Elliot Black, Elliot T. Glenny, and J. W. McNee, lieuts., R. A. M. C., with a note by Col. Sir Wilmot Herringham, British forces in France. Journal Royal Army Medical Corps, London. v. xxiv, 1915, p. 509-516. 4000 words; the same, British Medical Journal, July 31, 1915. SG.

See I. M. D., Annual, 1915, p. 34. Monthly List, (Army War College), no. 2, Nov., 1915. Item no. 181.

22

[BOMBS EMITTING ASPHYXIATING GASES USED BY GERMANS IN FLANDERS].

In article: The War in Europe. Army and Navy Journal, N. Y. v. 52, no. 2697. May 1, 1915, p. 1098. 300 words. AW. CA. ES. LC. SG.

Refers to Sir John French's report of the fighting to the north of Ypres. . . . "The chlorine gas . . . contained in steel cylinders," . . .

See also I. M. D., Annual, v. 1, 1915, p. 35.

23

BONNETTE, P.

Le casque des tranchées. Presse Médicale, Paris. v. xxiii, annexes, 1915, p. 362-367. SG.

24

BRADFORD, SIR J. R.

Cases of gas poisoning among the British troops in Flanders. By Sir J. R. Bradford and T. R. Elliott. British Journal of Surgery, Bristol, Eng. v. iii, 1915-16, p. 234-246. SG.

- 25
- BRADWOOD, WAT.
 War missiles, ancient and otherwise. *The Field, The Farm, The Garden*,
 London. v. 125, no. 3248. March 27, 1915, p. 525-527. LC.
 Historical treatise on the use of inflammable matter for ballistics.
- 26
- BRAMWELL, W.
 Poulitices and venesection in gas poisoning. *British Medical Journal*, London.
 v. ii, 1915, p. 460. SG.
- 27
- BROADBENT, WALTER.
 Results of German gas poisoning. *British Medical Journal*, London. Aug.
 14, 1915, p. 247-248. SG.
- 28
- BROTHERS IN ARMS—British and French soldiers wearing their poison-gas
 masks. *Sphere*, London. v. 63, no. 827, Nov. 27, 1915, p. 217. LC.
 Illustration with letterpress, showing respirators worn by soldiers. Reproduc-
 tion of a photograph.
 I. M. D., Annual, 1916, p. 518.
- 29
- BUSINCO, A.
 I gas così detti asfissianti in guerra. *Rivista di Medicina Legale*, Pisa,
 Italy. v. vi, 1916, p. 305-312. SG.
- 30
- CANARIES IN WARFARE. *Literary Digest*, N. Y. v. 54, no. 25. (Whole no.
 1418). June 23, 1917, p. 1958. LC.
 Susceptibility of canaries to detect the presence of gas (carbon monoxid) which
 is invisible and has no smell.
- 31
- CARPENTER, D. N.
 Smoke and powder gases in naval warfare. *Military Surgeon*, Washington.
 v. xxxix, 1916, p. 461-473. SG.
- 32
- CHASSEVANT, A.
 Traitement des victimes des gaz asphyxiants. *Bulletin Générale de*
Thérapeutique Médicale et Chirurgicale, Paris. v. clxix, 1916-17, p. 29-31.
 SG.
- 33
- CHLORINE GAS ON THE BATTLEFIELD. *Scientific American*, N. Y. v. 112, no.
 19, May 15, 1915, p. 452. 120 words. AW. CA. ES. LC.
- 34
- CHUGUNOFF, S. A.
 [Disturbances on the part of the mental and nervous system after intoxica-
 tion with the poisonous gases used by the Germans.] *Voyenno-*
Meditsinskij Jurnal, Petrograd. v. cexlv, Med.-spec. pt., 1916, p. 222-240.
 SG.

35

A COMBINATION OF PRUSSIC ACID AND ARSENATED HYDROGEN SAID TO BE USED BY GERMANS. The Military Surgeon, Chicago. May, 1916, p. 598.

AW. SG.

An abstract of an article published in "Arms and the Man." April 6, 1916. Monthly List, (Army War College), no. 9, June, 1916. Item no. 174.

36

CORMIO, R.

Note cliniche e terapeutiche sull' avvelenamento da gas asfissianti. Policlinico, Roma, v. xxxiii, sep. prat. 1916, p. 1231-1234. SG.

37

CORMIO, R.

Note cliniche e terapeutiche sull' avvelenamento da gas asfissianti. Gazzetta Medica Lombarda, Milano, Italy. v. lxxvi, 1917, p. 52-55. SG.

38

COW, D.

The effect of atropine in "gassed" patients. Lancet, London. v. i, 1915, p. 1259. SG.

39

COW, D.

Treatment of the symptoms arising from inhalation of irritant gases and vapours. By D. Cow and W. L. Symes. British Medical Journal, London. v. ii, 1915, p. 76. SG.

40

CRABBE.

Report on post-mortem examination of E. R., aged 21, German prisoner of war. Journal Royal Army Medical Corps, London, v. xxvi, 1916, p. 240. SG.

On gas poisoning.

41

CUSHMAN, ALLERTON SEWARD.

The rôle of chemistry in the war. Franklin Institute, Philadelphia, Pa. Journal. v. 181, no. 2, Feb., 1916, p. 163-190. ES. LC.

iv. The rôle of the halogens, p. 186-189.

42

DELAFORCE, E. F.

Weather-cocks. By Lieut.-Col. E. F. Delaforce, R. F. A. The Journal of the Royal Artillery, Woolwich, Eng. v. 43, no. 1, April, 1916. p. 15-17, incl. 2 diagrs., section and elevation. 250 words. AW. CA. ES. LC.

Protection against gas attacks. The "Weather-cock" is an contrivance which may be built from available improvised materials in the field, and warns of approaching gas attacks. I. M. D., Jan., 1917, p. 13.

43

DEVELOPING GAS HELMETS. Army and Navy Register, Washington, D. C. v. 61, no. 1920. May 5, 1917, p. 534. 630 words. AW. CA. LC.

Relates to work undertaken by the U. S. Bureau of Mines, Wash., D. C., for

the construction of a practical gas helmet. W. E. Gibbs, an experienced mechanical engineer has been at work for some time on this problem. Opinions have been sought of Dr. Yandell Henderson, Prof. of physiology in the Yale Medical School and recognized authority on the physiology of respiration, and of J. W. Paul in charge of rescue work.

44

DEVEZE.

Masque contre les vapeurs asphyxiantes. Par Devèze et Orsaud. La Presse Médicale, Paris. v. xxiii, 1915, p. 176. SG.

45

DISPERSING ASPHYXIATING GASES. Scientific American, N. Y. v. 113, no. 5. July 31, 1915, p. 93. 1010 words. 1 half-tone. CA. ES. LC.

Illustration: Fans to disperse asphyxiating gases. A suggestion made by a writer in the "Morning Post," London, and comments on the idea by "Nature."

46

DODGE, WILLIAM D.

Liquid fire and asphyxiating gases. Army and Navy Register, Washington, D. C. v. 60, no. 1876. July 1, 1916, p. 8. AW. CA. LC.

Historical record of the use of liquid fire and asphyxiating gases. Monthly List, . . . (Army War College), no. 11, Aug., 1916. Item no. 123.

47

THE DOUBLE ROLE OF CHLORINE IN WAR. Editorial. Boston Medical and Surgical Journal, Boston. July 1, 1915, p. 23-24. SG.

See I. M. D., Annual, 1915, p. 33.

48

DUJARRIC DE LA RIVIERE, R.

Étude clinique, anatomo-pathologique et histo-chimique des cas d'intoxications par les gaz irritantes employés par les allemands à Langemark. Par R. Dujarric de la Rivière et J. Leclercq. La Presse Médicale, Paris. v. xxiii, 1915, p. 253-255; the same, Académie de Médecine, Paris. Bulletin. 3e série, v. lxxiii, 1915, p. 574-576. SG.

Translations of this article were published under following titles, viz: A clinical anatomo-pathological and histo-chemical study of a series of cases of the intoxication produced by the irritant gases employed by the Germans at Langemark. The Medical Press and Circular, London. New series, C., 1915, p.362-365; and: Lecture on the effects of the gases employed by the Germans. Canada Lancet, Toronto, Ont., v. xlix, 1915, p. 156-166.

49

ELLIOTT, J. H.

The effects of poisonous gases as observed in returning soldiers. By J. H. Elliott and H. M. Towell. The International Journal of Surgery, N. Y. v. xxix, 1916, p. 383-388. SG.

50

EMPLOYMENT OF ASPHYXIATING GAS. Army and Navy Register, Washington, D. C. v. 58, no. 1832. Aug. 28, 1915, p. 269. 900 words. AW. CA. LC.

From Le Temps, Paris, May 9, 1915.
I. M. D., Annual, 1915. p. 35.

51

THE ENÉMY ON "PRECEDENTS FOR POISON GAS"! A German disquisition on the history of "chemical attack" in war. Illustrated London News, Lond., v. 147, pt. 1, no. 3981. Aug. 7, 1915, p. 178. 3 illus. AW. LC.

Historical sketch on the use of poison gas in war. Monthly List, (Army War College), no. 1, Oct., 1915. Item no. 116.

52

FERRERO DI CAVALLERLEONE, L.

Gas asfissianti e maschere protettive. Giornale della reale Accademia di Medicina di Torino, Torino, Italy. 4. ser., v. xxi, 1915, p. 356-370. SG.

53

FIGHTING WITH LIQUID FIRE. Literary Digest, N. Y. v. 52, no. 14 (whole 1354). April 1, 1916, p. 924-925. LC.

Describes the "nightmare of smoke and flame" produced by a flammenwerfer attack. The story is told by a wounded corporal of the British territorials, once a New Yorker, whose story was given out in a special cable to the N. Y. Times. His battalion held the trenches just inside Avoncourt Wood.

54

FLAME PROJECTORS. In: Medico-military statistics. Army and Navy Journal, N. Y. v. 53, no. 17. Dec. 25, 1915, p. 527. 1000 words.

AW. CA. ES. LC.

Comments on and abstracts from the report on the Medico-military aspects of the European war, by Surg. A. M. Fauntleroy, U. S. N., published under the direction of the Bureau of Medicine and Surgery, Navy Dept.

... "Chlorine or bromin gas, compressed in liquid form and liberated from large metal tanks, . . . has caused very distressing deaths," . . .

I. M. D. Annual, 1916, p. 258. Monthly List (Army War College) no. 6, March, 1916. Item no. 249.

55

FLAMEL, NICOLAS.

Torpilles aériennes. La Nature, Paris. v. 43, 2 semestre, no. 2195. Oct. 23, 1915, p. 263-266. 9 half-tones, 2 outline figs. LC.

Fig. 1. Les deux modèles de bombes du canon de tranchée de 58. Fig. 2. Canons de tranchée de 58 prêt à lancer une bombe Dumezil de 45 kilogrammes. Fig. 4. Appareil Moison armé de son projectile à corne. Fig. 5. Canon de 80 de montagne avec sa bombe de 105 kilogrammes. Fig. 6. Broche. Fig. 7. Lanterne. Fig. 8. Bagnette à charger. Fig. 9. Fusée munie de sa bagnette. Fig. 10. Affût trépied pour lancement des fusées. Fig. 11. Fusée de 12 court armée de la bombe de 22.

56

FOY, G.

Poisonous gas. The Medical Press and Circular, London. New ser., v. ciii, 1917, p. 16. SG.

57

FREEMAN, A.

Liquid-fire and poison gas. Living Age, Boston. 8th series, v. 6 (whole 293), no. 3802. May 26, 1917, p. 496-498. LC.

From Chambers's Journal.

Description of apparatus, materials and their application.

58

FREISE.

Ueber vergiftung durch pulvergase. *Medicinische Klinik*, Berlin. v. xi, 1915, p. 495. SG.

59

[FRENCH ABANDON USE OF LIQUID AIR IN BOMBS AS TOO DANGEROUS.] From *Japan Advertiser*. Dec. 1, 1916. Clipping filed in Envelope case: Bombs—France—European war. AW.
Monthly List . . . (Army War College), no. 17, Feb., 1917. Item no. 125.

60

GALLO, G.

Osservazioni cliniche su attantadue casi di intossicazione da gas asfissianti in guerra. *Giornale di Medecina Militaire*, Rome, Italy. v. lxxix, 1916, p. 772-804. SG.

61

GALLO, G.

Osservazioni cliniche su 82 casi di intossicazione da gas asfissianti in guerra. *La Riforma Medica*, Napoli; Roma, Italy. v. xxxiii, 1917, p. 100-104. SG.

62

GARDNER, W. T.

An inclined plane for the treatment of "gassed" cases. *Lancet*, London. v. ii, 1915, p. 78. SG.

63

GAS AS A WEAPON. *Literary Digest*, N. Y. v. 50, no. 23, whole no. 1311. June 5, 1915, p. 1323. Illus. LC.
Illus.: British troops equipped with respirators and goggles to resist the German gas.

64

GAS ASFISSIANTI. *Rivista Militare Italiana*, Roma. Anno lxi, Febb., 1916, p. 220-225. 1500 words. AW.
Signed G. E.

Flamethrowers used by Germans in attacking the advanced French trenches at Malancourt, Feb. 27, 1915, and at Vauquois, March 23, 1915. See I. M. D., Annual, 1916, p. 65.

65

I GAS ASFISSIANTI IN GUERRA; impiego ed effetti; difese e provvedimenti. *Rivista d'Igiene e Sanità Pubblica*. Parma. v. xxvii, 1916, p. 409-420. SG.

66

OS GASES ASFIXIANTES E OS LIQUIDOS INFLAMAVEIS NA GUERRA ACTUAL. *Revista de Artilharia*. Lisboa. 13.º ano. no. 145. Julho, 1916, p. 34-45. 3500 words. CA.

Signed F. B.

Asphyxiating gases and inflammable liquids in the present war. I. M. D., Annual, 1916, p. 64.

67

GASES ASFIXIANTES Y PROYECTILES INCENDIARIOS. Memorial de Ingenieros del

- Ejército, Madrid. T. 33, no. 3. Marzo, 1916, p. 101-110. 6 outline figs.
3700 words. AW. CA. ES.
- Signed: S. F. S.
Asphyxiating gas and incendiary projectiles, methods and devices employed.
I. M. D., Annual, 1916, p. 63. Monthly List, (Army War College), no. 10.
July, 1916. Item no. 178.
- 68
- GAS IN MILITARY MINES: the symptoms of carbon monoxide poisoning. Hos-
pital, London. v. lx, 1916, p. 169. SG.
- 69
- GAS POISONING IN WAR. Canada Lancet, Toronto, Ont. v. xlviii, 1914-15,
p. 641. SG.
- 70
- GAS SOFFOCANTI, GAS VELENOSI E GAS ASFISSANTI USATI IN GUERRA.
Rivista i Artiglieria e Genio, Roma. xxxiii (55a) annata, v. 2, Aprile,
1916, p. 86-88. AW. CA. ES.
- A review of the article by V. B. Lewis in the Engineer, London, July 23, 1915,
and reference to the idea of Lord Dundonald.
- 71
- LES GAZ ASPHYXIANTS. Annales d'Hygiène publique et de Médecine Légale,
Paris. 4e série. v. xxiv, 1915, p. 162-175; the same. Revue Générale de
Clinique et de Thérapeutique, Paris. v. xxix, 1915, p. 476-478. SG.
- 72
- LES GAZ ASPHYXIANTS OU DELETERES. 1120 words. Clipping from La
France Militaire, Paris. July 15, 1916.—Filed—Envelope case—European
war. Monthly List (Army War College), no. 12. Sept., 1916. Item
no. 147. AW.
- Article signed: Gribeauval.
German use of poison gas methods.
- 73
- GAZES ASPHYXIANTES. Boletim Mensal do Estado do Exército, Rio de Janeiro,
Brazil. vol. xii, no. 2, Agosto, 1916, p. 144-146. 1 plate (3 figs.) 1120
words. AW.
- Fig. 1. Tapa-bocca ou mordação de gazes. Figs. 2, 3. Mascaras de tela
tratadas com uma dissolução alcalina.
Asphyxiating gas and masks used for protection against it. Monthly List,
(Army War College), no. 14. Nov., 1916. Item no. 119.
- 74
- GERMAN FLAME-PROJECTORS IN USE. French testing flammenwerfer captured
from the enemy. Illustrated London News, London. v. 147, pt. 1, no.
3986. Sept. 11, 1915, p. 330-331. 3 illus. AW. LC.
- Monthly List . . . (Army War College), no. 2, Nov., 1915. Item no. 169.
- 75
- A GERMAN GAS-ATTACK SEEN FROM THE AIR: a remarkable "snap." Illus-
trated London News, Lond., v. 147, no. 4000, Dec. 18, 1915, p. 789.
AW. LC.

1 illustration with letterpress, reproduced from a photograph.

Monthly List . . . (Army War College), no. 5, Feb., 1916. Item no. 274.

76

GERMAN METHODS OF TRENCH WARFARE. Professional Memoirs, Washington.
v. 9, no. 47. Sept.-Oct., 1917. p. 551. AW. CA. ES. LC.

20. Asphyxiating gas. (62 words).

77

GERMAN TYPE OF GAS MASKS AND HELMETS WORN DURING AN ATTACK. Illustrated. Clipping filed in Envelope case: Helmets—Germany—European war. AW. LC.

Monthly List . . . (Army War College), no. 14, Nov., 1916. Item no. 120.

78

GERMAN USE OF ASPHYXIATING GAS. Army and Navy Register, N. Y. v. 57,
no. 1819. May 29, 1915, p. 675. 550 words. AW. CA. LC.

I. M. D. Annual, 1915, p. 35.

79

GERMAN USE OF ASPHYXIATING GAS. The Sphere, London. v. 61, no. 801.
May 29, 1915. Illus. p. 202. LC.

Illustrations: How the gas devil comes—"The thick, green mist came rolling towards the parapet."—British soldiers protected against poisonous gas fumes.—The effects of asphyxiating gas on French soldiers.

I. M. D. Annual, 1915, p. 35.

80

THE GERMAN USE OF ASPHYXIATING GASES. British Medical Journal, London. v. i, 1915, p. 774. SG.

81

[GERMAN USE OF POISONOUS GAS]. The Broad Arrow, London. v. 95, no. 2459, Aug. 13, 1915, p. 185. AW. LC.

Under: Miscellaneous notes. Sir Hiram Maxim's scheme combating bombs, by throwing of bombs which will set the gas on fire.

Monthly List, (Army War College), no. 1, Oct., 1915. Item no. 121.

An abstract in: Army and Navy Journal, N. Y. v. 52, no. 2714, Aug. 28, 1915, p. 1647. 320 words.

Monthly List . . . (Army War College), no. 1, Oct., 1915. Item no. 120.

82

GOGGLES, MASKS AND BAYONETS DEFYING THE ENEMY POISON GAS. Illustrated London News, Lond., v. 147, pt. 1, no. 3979. July 24, 1915, p. 114. 4 illus. AW. LC.

4 pictures with descriptive letterpress relating to goggles, masks, etc., used as protectors against poison-gas.

Monthly List, (Army War College), no. 1, Oct., 1915. Item no. 119.

83

THE GREEK-FIRE OF THE GERMANS. Illustrated London News, London. v. 149, pt. 1, no. 4033. Aug. 5, 1916, p. 168. Under Heading: Science jottings. AW. LC.

The constituent parts of Greek fire and how employed.
Monthly List . . . (Army War College), no. 13, Oct., 1916. Item no. 102.

84

HANSEN, N. L.

De kvælende gasarter. Af N. L. Hansen, Kemiker ved Hærens Krudtværk og kemisk konsulent for Hærens tekn. Korps. Dansk Artilleri-tidsskrift, Kjøbenhavn, w. Aargang, no. 5. Sept., 1915, p. 194-199. 1850 words. I. M. D., Annual, 1915. p. 33. AW. CA.

. . . "Information as to the chemical composition of the gases is only available in papers and reviews of the Allies, as the Central Powers are silent." . . . Article treats on the component parts of the gas and on means of protection against the same.

85

HETZ, J.

Sur les troubles cardiovasculaires et l'état du sang dans les intoxications par les gaz asphixiants des allemands. Archives des Maladies du Coeur, des Vaisseaux et du Sang, Paris. v. viii, 1915, p. 447-454. SG.

86

HENDRY, A. W.

Some general notes on suffocation by poisonous gases with detailed notes on one fatal case. By A. W. Hendry and E. L. Horsburgh. British Medical Journal, London. v. i, 1915, p. 964; the same, Journal Royal Army Medical Corps, London. v. xxiv, 1915, p. 374-376. SG.

87

HERLITZKA, A.

Sulla difesa dai gas asfissianti. Giornale della Reale Accademia di Medicina di Torino, Torino, Italy. 4 ser. v. xxi, 1915, p. 277-304. SG.

88

HILL, LEONARD.

Gas poisoning; physiological symptoms and clinical treatment. Journal, Royal Army Medical Corps, London. v. xxvi, 1916, p. 110-121; the same, Lancet, London. Dec. 4, 1915, p. 1248-1249; the same. British Medical Journal, London. Dec. 4, 1915, p. 801-804; 822. SG.

Read before the Medical Society of London.

89

A HISTORY OF THE ASPHYXIATING GAS. The manner in which the Germans employ the gas at the front. Translation. no. 2884. Monthly List. . . . (Army War College), no. 5, Feb., 1916. Item 269. AW.

From sundry articles which have appeared in French journals.

90

A "HONK! HONK!" IN THE TRENCHES MEANS "DON YOUR GAS MASKS!" (Popular Science Monthly, N. Y. v. 90, no. 5, May, 1917, p. 664. 1 illus. 300 words. ES. LC.

Half-tone: "At the approach of poison gas in the trenches a klaxon horn is sounded."

I. M. D., June, 1917, p. 307.

91

HORSES AS WELL AS MEN MASKED AGAINST GAS! A French ammunition team about to enter the danger zone. Illustrated London News, London, v. 150, no. 4064. March 10, 1917, p. 273. AW. LC.

1 picture reproduced from photograph, showing protection of men and beast against gas attacks.

Monthly List . . . (Army War College), no. 20, May, 1917. Item no. 191.

92

HORWOOD, J. G.

The prevention of gas poisoning. British Medical Journal, London. v. ii, 1915, p. 161. SG.

93

HYPHO AND STRAW: when the poison-gas cloud is seen. Illustrated London News, London. v. 147, pt. 1, no. 3979, July 24, 1915, p. 103. AW. LC.

Monthly List . . . (Army War College), no. 1, Oct., 1915. Item no. 118. French method for protection against poison gas.

94

IRVINE, LOUIS G.

Gassing accidents from the fumes of explosives. British Medical Journal, London. 1916, v. i. Jan. 20, 1916, p. 162-166. 6500 words. SG.

Asphyxiating gases from mine explosions.

See I. M. D., Annual, 1916, p. 64.

95

KERSHAW, JOHN B. C.

Use of poisonous gases in warfare. How gases are generated and how men may protect themselves from them. By John B. C. Kershaw, F. I. C. Scientific American, N. Y. v. 112, no. 24, June 12, 1915, p. 595-598. Illus. ES. SG.

Fig. 1. Respirator capable of being used with absorbing chemicals. Fig. 2. Two views of a French type of flannel muzzle. Fig. 3. Italian respirator provided with exit valve for exhaled air. [4.] British soldiers prepared to weather a gas attack.

The original of this article was published in Cassier's Engineering Monthly, London. July, 1915, p. 51-56. 2 figs.

96

KOHN-ABREST, E.

Dispositif pour l'essai rapide des substances employées contre les gaz nocifs. Académie des Sciences, Paris. Comptes Rendus hebdomadaires des séances. Tome 161, no. 11. Sept. 13, 1915, p. 310-313. 1 outline fig. LC. SG.

97

KOLOSOFF, G. A.

[Symptoms and treatment of poisoning with asphyxiating gases.] Russkiy Vrach, Petrograd. v. xiv, 1915, p. 1065-1071. SG.

98

LESLIE, R. M.

Asphyxiating gases in war. *British Journal of Nursing*, London. v. lv, no. 3, 1915; *Midland Medical Journal*, Birmingham, Eng. v. xiv, 1915, p. 115. SG.

99

LESLIE, R. M.

Clinical effects of asphyxiating war gases. *American Medicine*, Phila., Pa., Burlington, Vt., and N. Y. v. x, 1915, p. 875-882. SG.

100

LEVY, F.

Étude sur le syndrome respiratoire consécutif à l'absorption de gaz asphyxiants. *La Presse Médicale*, Paris. v. xxiii, 1915, p. 255. SG.

101

LEWIN, L.

Ueber vergiftung durch kohlenoxydhaltige explosionsgase aus geschossen. *Münchener Medizinische Wochenschrift*, München. v. lxii, 1915, p. 465. SG.

102

LEWIS, VIVIAN B.

Modern munitions of war. iii. Poison gas and incendiary bombs. Illustrated *London News*, Lond., v. 147, pt. 1, no. 3980, July 31, 1915, p. 140. 4 illus. AW. LC.

German use of poison-gas and its probable components.

Illustrations: British air bomb of small type.—German incendiary bomb dropped during one of the air raids on this country (England).—Showing weight of a gas-essential to its effectiveness in trench warfare. With an outer skin of hemp: a German incendiary bomb dropped in England.

Monthly List (Army War College), no. 1, Oct., 1915. Item no. 117.

103

LEWIS, VIVIAN B.

Modern munitions of war. *The Engineer*, London. v. 120, no. 3108. July 23, 1915, p. 82-83. 2130 words. ES. LC.

Lecture at the Royal Society of Arts, July 21, 1915, on poisonous gases and bombs.

104

LEWIS, VIVIAN B.

Poison gas and incendiary bombs. *Nature*, London. v. 95, July 29, 1915, p. 608-609. LC.

Abstract of lecture delivered at the Royal Society of Arts, June 21, 1915.

(In: The Government scheme for the organization and development of scientific and industrial research, iii.)

105

LIQUID FIRE. Clipping from *Daily Mail*, London. July 1, 1916. Filed in

- envelope case: Liquid fire—European war. AW.
 Monthly List . . . (Army War College), no. 12, Sept., 1916. Item no. 139.

106

- LIQUID FIRE. From Japan Advertiser. Oct. 18, 1916. Clipping filed in
 Envelope case: Fire—Liquid. AW.
 Historical instance of use of liquid fire.
 Monthly List . . . (Army War College), no. 16, Jan., 1917. Item no. 140

107

- LIQUIDOS INFLAMABLES. La Guerra y su Preparación, Madrid. tomo i, no. 1,
 Mayo, 1916, p. 121. 220 words. AW. CA.
 From "Rivista Militare Italiana."

108

- LIQUIDOS INFLAMMAVEIS. Boletim Mensal do Estado do Exercito, Rio de
 Janeiro. v. xii, no. 2, Agosto, 1916, p. 146-147. 2 plates (3 figs.) 230
 words. AW.
 Fig. 4. Maletas para condução das mascareas. Fig. 5. Lança-bomba Aasen.
 Fig. 6. Arbalete "Gafanhoto."

109

- LOEPER, and others.
 La gastrite des soldats asphyxiés. Par Loeper, Peytel and Sabadini. La
 Presse Médicale, Paris. v. xxiii, 1915, p. 240. SG.
 An English translation of the above was published under the title: French
 clinical lecture on the gastritis of asphyxiated soldiers. Medical Press and
 Circular, London. New Ser. C., 1915, p. 180-190.

110

- LOS LANZA-LLAMAS. Memorial de Artillería, Madrid. Serie vi, tomo x, p. 118-
 123. 2 diagrs. 1870 words. AW.
 Flame projectors. Notes on the employment of flame projectors. From
 "Larousse Mensuel Illustré."
 Fig. 1. [Showing early type of apparatus]. Fig. 2. [Showing application of
 flame thrower].
 Monthly List . . . (Army War College), no. 12, Sept., 1916. Item no. 141.

111

- LOS SERVICIOS SANITARIOS DEL EJERCITO INGLES EN LA GRAN GUERRA. La
 Guerra y su Preparación, Madrid. tomo i, no. 1, Mayo, 1916, p. 59-91.
 14103 words. AW. CA.
 Los gases asfixiantes, p. 77, (176 words).

112

- LUCHERINI, T.
 A proosito dei gas asfissianti. Archivio di farma-cologia sperimentale e
 Scienze affini, Roma. v. xxii, 1916, p. 429-441. SG.

113

LUNG, G. A.

Asphyxiating gases as a weapon in warfare. *The Military Surgeon*, Chicago.
v. xxxvii, 1915, p. 411-424. SG.

114

McCULLOUGH, J. W. S.

Poisoning by noxious gases. *The Canadian Practitioner and Review*, Toronto,
Ont. v. xl, 1915, p. 525-531. SG.

115

McINTIRE, J. T.

Asphyxiating gases. *Journal Royal Army Medical Corps*, London. v. xxiv,
1915, p. 302. SG.

116

McWALTER, J. C.

The prevention of gas poisoning. *British Medical Journal*, London. v. ii,
1915, p. 118. SG.

117

MILLER, A. G.

Poisonous gases. *British Medical Journal*, London. v. i, 1915, p. 1101. SG.

118

MILITARY USE OF SABADILLA IN THE TEAR-PRODUCING GASES. *Scientific American*,
N. Y. v. 115, no. 3, July 15, 1916. 315 words. CA. ES.
Monthly List . . . (Army War College), no. 11, Aug., 1916. Item no. 126.

119

MORAL ASPECTS OF ASPHYXIATION. *Literary Digest*, N. Y. v. 50, no. 24,
June 12, 1915. 2 illus. LC.

Illus.: Dutch and German cartoonists air their views on gas.

120

MORTIMER, J. D.

The treatment of gas poisoning. *Lancet*, London. v. i, 1915, p. 1262; the
same, *Medical Press and Circular*, London. New ser. v. xcix, 1915, p. 566.
SG.

121

MOTT, F. W.

Punctiform haemorrhages of the brain in gas poisoning. *British Medical*
Journal, London, no. 2942. May 19, 1917, p. 637-641. 8 illus., 1 plate.
SG.

122

MUNITIONS OF THE PRESENT WAR. *Railway Review*, Chicago. v. 57, no. 12.
Sept. 18, 1915, p. 373-376. LC.

Poisonous gases and incendiary bombs, p. 375-376.

123

NEUE FRANZOESISCHE GASBOMBE. Artilleristische Monatshefte, Berlin. no. 102.
Juni, 1915, p. 343. 150 words. AW. CA.

Heading: Verschiedenes.

New French gas bombs. Frankfurter Zeitung, Mai 28, 1915, quoting a report of the London Times.

I. M. D. Annual, 1915, p. 34.

124

NEW GERMAN DEVICES. Shells filled with liquid poison. Field Artillery Journal, Washington. v. 7, no. 3. July-Sept., 1917, p. 347-348. 363 words.

AW. CA. ES.

[Chap.] "Current field artillery notes."

Relates to devices used by the Germans on the French town Armentières, near the Belgian frontier.

125

NICOLSKI, D.

[Construction of a museum of the means against the action of asphyxiating gases.] Russkiy Vrach, Petrograd. v. xiv, 1915, p. 738. SG.

126

NOTES ON METHODS TO BE ADOPTED TO MEET ASPHYXIATING GASES. How to use the respirator. Filed pocket card—Gases—European war, 1914-15. Monthly List. . . . (Army War College), no. 2, Nov., 1915. Item no. 182. AW.

127

OHNESORG, K.

Intoxication by detonation and explosion gases aboard ship. United States Naval Medical Bulletin, Washington. v. x, 1916, p. 625-633. SG.

128

OTTER, C. G. VON

Kväfvande gaser som stridsmedel. Artilleri-Tidskrift, Uppsala, Sweden. v. 46, parts 1-2, 1917, p. 69-80. 3450 words. CA.

Gases as instruments of warfare.

I. M. D., Sept., 1917, p. 500.

129

PARKER, RUSHTON, and others.

Poisonous gases. By Rushton Parker, J. D. Mortimer, W. S. Syme, and Harry Campbell. British Medical Journal, London. June 12, 1915, p. 1016, 1027-1028; June 19, 1915, p. 1065-1066. SG.

Editorial and letters.

130

PASCAL, PIERRE.

La lutte contre les gaz asphyxiants de l'armée allemande. Le Génie Civil, Paris. v. 66, no. 24, June 12, 1915. p. 377-380. 1 diagr. ES. LC.

Extracts under the title: Combatting asphyxiating gases, have appeared in:
 *The Engineer, London. v. 119, June 18, 1915, p. 598; *Engineering Magazine,
 N. Y. v. 50, no. 1, Oct., 1915, p. 114-116.

Nature of asphyxiants and means available, and employed in the present war,
 for rendering them innocuous.

131

PELLEGRINI, R.

Sui gaz asfissianti usati in guerra; considerazioni ed osservazioni personali.
 Pensiero Medico, Milano. v. vi, 1916, p. 493; 505; 517. SG.

132

PELLEGRINI, R.

Sulle lesioni anatomopatologiche da gaz asfissianti. Il Morgagni, Napoli;
 Milano. v. lviii, pt. 1, 1916, p. 297-309. SG.

133

PICCININI, P.

Per la difesa dei gas asfissianti. Gazzetta Medica di Roma, Roma. v. xliii,
 1917, p. 30-35. SG.

134

PIERI, G.

L'intossicazione da gas asfissianti (cloro). Rivista Ospedaliera, Roma,
 Italy. v. v, 1915, p. 542-549. SG.

135

PISANO, G.

Contributo alla conoscenza dell' azione tossica dei gas velenosi usati dagli
 Austro-Tedeschi. Gazzetta degli Ospedali e delle Cliniche, Milano, Italy.
 v. xxxvii, 1916, p. 1521. SG.

136

PLANTS AND ASPHYXIATING GASES. Scientific American Supplement, N. Y.
 v. 83, no. 2148. March 3, 1917, p. 132. 240 words. CA. ES. LC.

Deals with the effect of deleterious gases on plants in and near the fighting line.

137

POISONOUS GASES. British Medical Journal, London. v. i, 1915, p. 1016. SG.

138

POISONOUS GASES AT THE FRONT. Medical Magazine, London. v. xxiv, 1915,
 p. 191. SG.

139

POISONOUS GASES IN WAR. The Journal of State Medicine, London. v. xxiii,
 1915, p. 219. SG.

The same title: Canada Lancet, Toronto, Ont. v. xlviii, 1915, p. 545-547.

140

PURVIS, J. E.

Asphyxiating gasses. Cambridge Review, Cambridge, Eng. May, 1915, p. 325-326.

A chemist's comment on the manufacture and employment of such gases.

141

RAHENA, F.

Los gases asfixiantes como arma de la presente guerra Europea. Revista Valenciana de Ciencias Médicas, Valencia, Spain. v. xviii, 1916, p. 113. SG.

142

RATHERY, F.

Les accidents occasionnés par les gaz toxiques dits asphyxiants employés par les allemands. Étude clinique, anatomo-pathologique et thérapeutique. Paris Medical, Paris. v. xvii, 1915-16, p. 389-394. SG.

143

RENSHAW, A.

Post-mortem appearances of septicaemia resulting from "gas poisoning" and their relations to anti-typhoid inoculation statistics. Journal Royal Army Medical Corps, London. v. xxiv, 1915, p. 591-593. SG.

144

RESPIRATORS. Information, N. Y. v. 1, 1915, p. 503. 210 words. ES. LC.

French gas mask adopted, described from an article of "La Nature." Paris, May 22, 1915.

145

RHO, F.

Avvelenamento per gas derivanti dagli esplosivi sulle navi da guerra. Annali di Medicina Navale, Roma. v. ii, 1916, p. 336-343. SG.

146

ROBERTS, A. A.

La chimie sur le front. Gaz asphyxiants et liquides enflammés. La Science et la Vie, Paris, v. viii, no. 22. Août et Sept., 1915, p. 243-523. 20 illus., 4 outline figs. 4500 words. AW. LC.

Illustrations show flame projectors, their construction and application also the various means for protection against gas attacks, viz: Masks, helmets, respirators, etc.

Monthly List . . . (Army War College) . . . no. 5, Feb., 1916. Item no. 356.

147

SADOVSKI, P. P.

[Poisoning with asphyxiating gases en masse.] Sibirskiy Vrach, Tomsk, Siberia. v. ii, 1915, p. 189-191. SG.

148

LA SECONDA BATTAGLIA DI YPRES. I gas asfissianti ed i cannoni tiranti a 30 chilometri. Rivista di Cavalleria, Pinerolo, Italy. Anno xviii. Fascicolo xi. 15 Novembre, 1915, p. 421-433. 3600 words. AW.

Signed: x.

The second battle of Ypres. "Asphyxiating gases and guns of 30 kilometer range conquered on a battle field for the first time at 5 p. m. on April 22, 1915, when the Germans attacked a French division . . . "I. M. D., Annual, 1915, p. 64.

149

SERGEANT, É.

Note sur quelques effets cliniques des gaz asphyxiants. Par É. Sergeant at A. Agnel. Société Médicale des Hôpitaux de Paris, Paris. Bulletins et Mémoires. 3e série. v. xxxix, 1915, p. 960-964. SG.

150

SERONO, C.

I gas asfissianti e tossici adoperati in guerra e la difesa contro di essi. Di C. Serono e E. Trocello. Annali di Medicina Navale, Roma. v. i, 1915, p. 550. 562. The same. Archivio di farmacognosia e Scienze Affini, Roma. v. iv, 1915, p. 167-174. SG.

151

SISTO, P.

L'avvelenamento per gas asfissianti. La Riforma Medica, Napoli; Roma, v. xxxii, 1916, p. 1234; 1265; 1290. SG.

152

SKVORTSOFF, V. I.

[Treatment of those poisoned with asphyxiating gases.] Russkiy Vrach, Petrograd. v. xiv, 1915, p. 793. SG.

153

SNIVELY, H. H.

A national guardsman on the Galician front. By Major H. H. Snively, Medical Corps, Ohio National Guard. National Guard Magazine, Columbus, O. v. 13, no. 7, July, 1916, p. 132-133; 140-141. AW. ES.

Monthly List . . . (Army War College), no. 11, Aug., 1916. Item no. 125.

Describes, on page 132, first column, constituents of solution used by Russians for saturating masks against poison gases.

154

SOBRE GASES ASFIXIANTES. La Guerra y su Preparación, Madrid. tomo i, no. 1, Mayo, 1916, p. 114-119. 4 figs. 1300 words. AW. CA.

"De datos facilitados por testigos presenciales de la lucha en el frente y por los tentientes coroneles D. Julio Vicéns y D. José Rodríguez de la Riva."

Illustrations show masks and respirators worn by soldiers, and pouches in which they are carried.

I. M. D., Annual, 1916, p. 62-64.

155

SPRAYING LIQUID FIRE: The German "flammenwerfer" in action. Illustrated

London News, Lond., v. 147, part 1, no. 3983, Aug. 21, 1915, p. 253.

AW. LC.

Picture, drawn by A. Forestier from material supplied, with descriptive letter-press, on the German flame projector used in attacks on trenches.

Monthly List . . . (Army War College), no. 1, Oct., 1915. Item no. 108.

156

SUFFOCATING GASES AND THEIR ANTIDOTES. Scientific American Supplement, N. Y. v. 82, no. 2115. July 15, 1915, p. 36. 490 words. CA. ES. LC.

Abstract of an address of an Italian chemist, Signor Guareschi, before the Chemico-Tech. Society, Turin, Italy.

157

SUFFOCATING THE ENEMY. Literary Digest, N. Y. v. 50, no. 19, March 8, 1915, p. 1063. 2100 words. LC.

Newspaper comments on this new mode of offense.

Sir James Dewar, P. R. I., is quoted as saying that the Germans undoubtedly have hundreds of tons of chlorine available, that they have been manufacturing it for years in tremendous quantities.

I. M. D., Annual, 1915, p. 34.

158

SUNDELL, C. E.

The clinical manifestations of gas in military mines. Lancet, London. v. i, 1916, p. 957. SG.

159

SYMONS, C. H.

Poisoning by gasses from explosives. Journal of the Royal Medical Service, London. v. ii, 1916, p. 513-516. SG.

160

TENGELY, IDA C.

The use of atropine in gassed patients. Lancet, London. v. i, 1915, p. 1203. SG.

161

TEYNAC, A.

Sur un cas d'asphyxie multiple et compliquée observé sur le front. Contribution à l'hygiène des transports militaires automobiles. Journal de Médecine de Bordeaux, Bordeaux, France. v. xlvii, 1916, p. 107-111. SG.

162

THROWING LIQUID FIRE. One of the novel weapons brought forth by the war. Scientific American Supplement, N. Y. v. 81, no. 2112. June 24, 1916, p. 405. 1 illus., 4 sections, 1 outline fig.; Literary Digest, N. Y. v. 53, no. 5, (whole 1371), July 29, 1916, p. 246. Title: Liquid fire as a weapon. Same illus. AW. LC. ES.

Monthly List (Army War College), no. 11, Aug., 1916. Item no. 118.

Illustrations: Operating a flame projector in a German trench. Fig. 1. Early type of "flammenwerfer." Flame deflected by a shield. Fig. 2. Improved

type with attached ignition jet. Fig. 3. Improved apparatus with separate ignition jet. Fig. 4. How the device is fed from a protected reservoir. Fig. 5. Portable apparatus for projecting flames.

163

TILDEN, WILLIAM AUGUSTUS.

Poisonous gases in warfare and their antidotes. *Nature*, London. v. 95, no. 2380. June 10, 1915, p. 395-397. 2 figs. (outline cuts). LC.

Abstract in: **Engineering Magazine*, N. Y. v. 49, no. 5, Aug., 1915, p. 739. 700 words. ES. LC.

Elements and compounds which the Germans made use of, and means for combatting them.

164

[TILSON, JOHN Q.]

Gases in warfare. *Congressional Record*, Washington, D. C. June 27, 1917, p. 4761. AW. LC.

Colonel John Q. Tilson's lecture before Congress. History of the use of gas in warfare. Methods used in the European war. Gas bombs from aircraft. Defense against gas.

165

TILSON, JOHN Q.

Gases in warfare. By Colonel John Q. Tilson. *Infantry Journal*, Washington. v. 14, no. 2, Aug. 1917, p. 108-117. 5520 words.

AW. CA. ES. LC.

Extracts from speech in House of Representatives, June 27, 1917.

166

TOURNEMAIN, ALFRED.

Les projectiles de tranchées: bombes, grenades, pétards et torpilles. *Science et la Vie*, Paris, t. 8, no. 23, Oct., Nov., 1915, p. 546-554. 13 illus., 1 diagn. AW. LC.

167

TRAITEMENT DES MALADES ATTEINTS PAR LES GAZ ASPHYXIANTS. Clipping from *La France Militaire*, Paris. Dec. 14, 1915. Filed Pocket card—Gas—European war. Item no. 273. *Monthly List* (Army War College). no. 5, Feb., 1916. AW.

Course of treatment in French army for men suffering from effects of poison gas.

168

TREMOLIERES, F.

Effets des gaz irritants des projectiles de guerre. Par F. Trémolières et P. Loew. *Société Médicale des Hôpitaux de Paris*, Paris. 3e série. v. xxxix, 1914, p. 597-600. SG.

169

UNLAWFUL WARFARE. *Candid Quarterly Review of Public Affairs*, London. v. 4, no. 7. Aug., 1915, p. 559-571. LC.

Reprint from "The Panmure papers," by Sir Geo. Douglas and Sir Geo. Dalhousie Ramsay, Lond., Hodder & Houghton, 1908.

Admiral Lord Dundonald's plan for the use of sulphurous acid gas.

From p. 562. ". . . The great admiral Lord Dundonald—perhaps the ablest sea captain ever known, not even excluding Lord Nelson—was also a man of wide observation, and no mean chemist. He had been struck in 1811, by the deadly character of the fumes of sulphur in Sicily; and when the Crimean war (1855) was being waged, he communicated to the English government, then presided over by Lord Palmerston, a plan for the reduction of Sebastopol by sulphur fumes. The plan was imparted to Lord Panmure and Lord Palmerston, and the way in which it was, is so illustrative of the trickery and treachery of the politician that it is worth while to quote Lord Palmerston's private communication upon it to Lord Panmure:" . . .

. . . "Lord Dundonald also contemplated floating naphtha on the water, and igniting it by means of a ball of potassium. The uncertainty of the wind condemned his plans."

170

THE USE OF ASPHYXIANTS IN WARFARE. *Nature*, London. v. 95, no. 2374. April 29, 1915, p. 234. LC.

171

THE USE OF POISONOUS GASES IN WARFARE. *The Medical Magazine*, London. v. xxiv, 1915, p. 296-298. SG.

172

VERSHININ, N. V.

[Poisoning with asphyxiating gases.] *Sibirskiy Vrach*, Tomsk, Siberia. v. ii, 1915, p. 231. SG.

173

VERWENDUNG BETAEBENDER GASE. *Medicinische Blätter*, Wien. v. xxxvii, 1915, p. 172; 184. SG.

174

VICTORIA, CARLOS.

La guerra moderna. Los gases asfixiantes o deletéreos. *Memorial de Caballeria*, Madrid. Año i, num. 3, Sept., 1916, p. 257-260. 1400 words. 2 illus. Army Service Schools Lib.

Illus. [Fig. i] Mascarilla usada en el ejército inglés. [Fig. ii] Mascarilla reglamentaria en el ejército francés. . . . "Gas was employed by the Germans for the first time, near Ypres, on 22 April, 1916, in preparing for the attack against the sector Steenstraate-Langemark." . . . Article gives the composition, and effect of the gas, as well as means of protection against the same.

See I. M. D., Jan., 1917, p. 13.

175

VISHEGORODSKAYA, YE. S.

[Cases of nervous disturbances in poisoning with German asphyxiating gases.] *Psikhiatricheskaya Gazeta*, Petrograd. v. ii, 1915, p. 275. SG.

176

WAINWRIGHT, LENNOX.

What is the gas? *Lancet*, London. July 24, 1915, p. 198. SG.

177

WAR BY POISON. The Spectator, London. v. 114, no. 4532. May 8, 1915,
p. 642-643.

On gas poisoning.

178

YABLONSKI, YE. K.

[Apparatus for giving aid to those poisoned with gases, or found in a state
of asphyxia.] Morskoï Vrach, Petrograd. 1915, p. 280-296. SG.

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