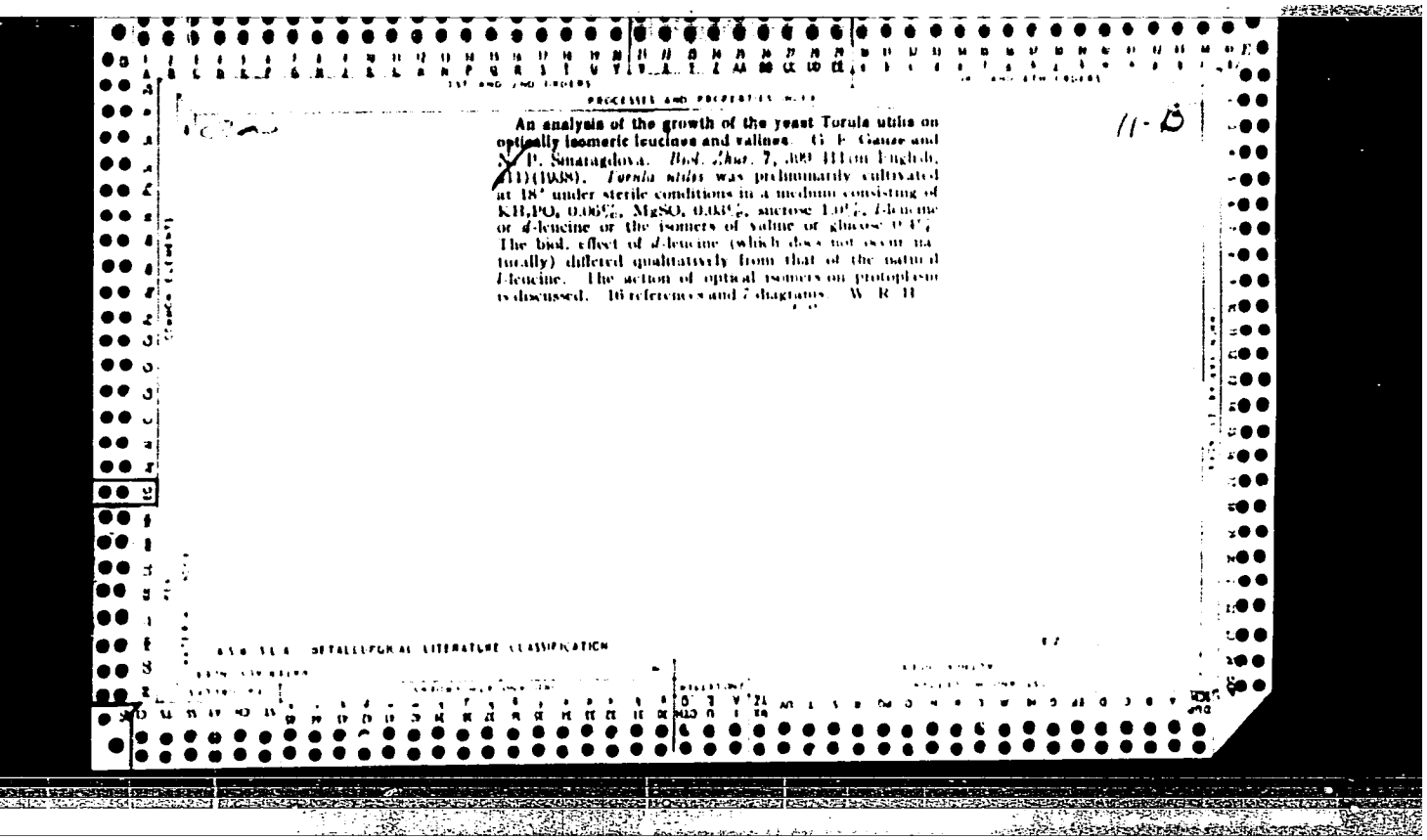
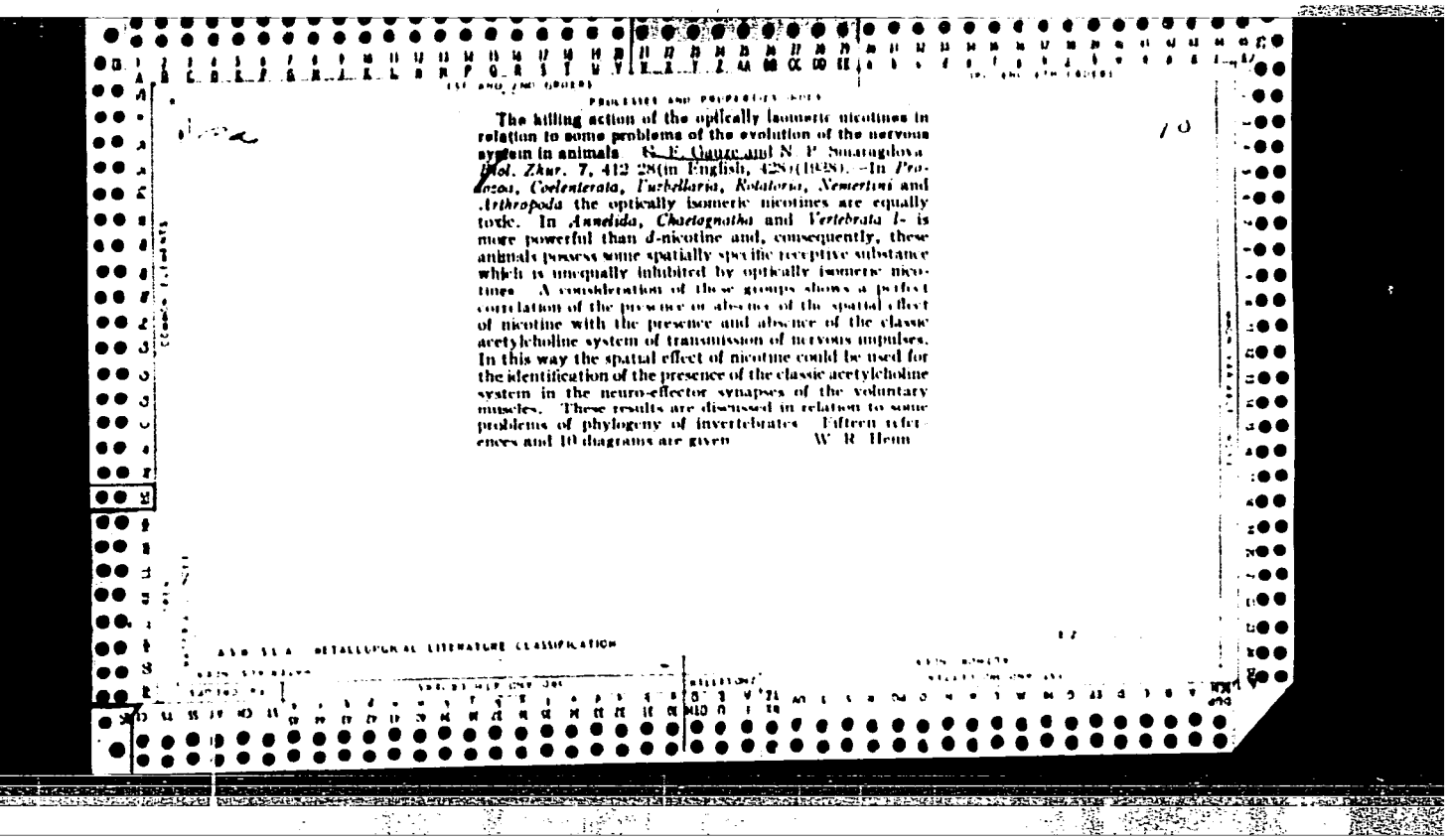
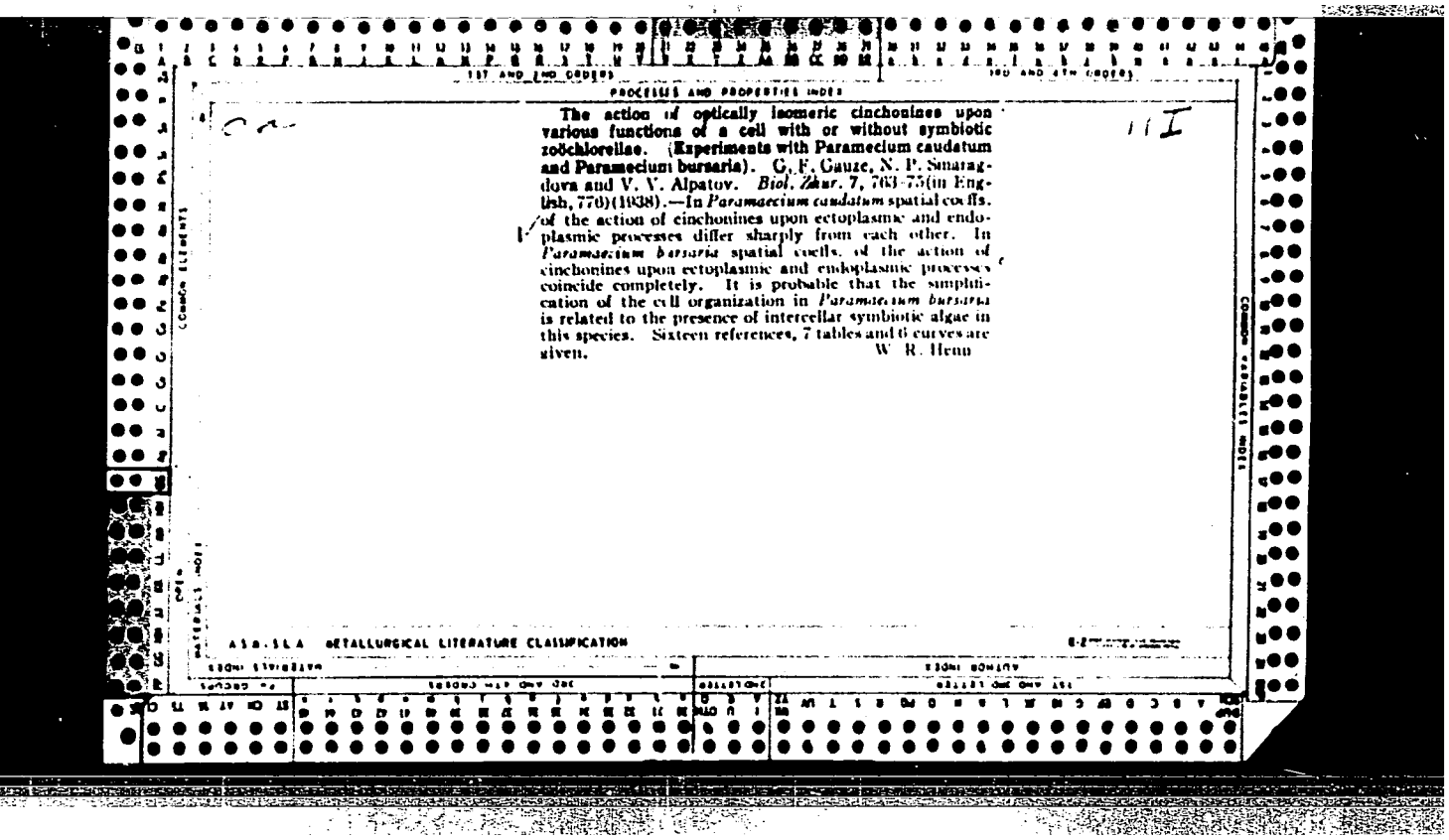


An analysis of the growth of the yeast Torula utilis on optically isomeric leucines and valines. G. F. Gause and N. P. Smaragdova. *Biol. Zhur.* 7, 309-11(in English, 311)(1938). *Torula utilis* was preliminarily cultivated at 18° under sterile conditions in a medium consisting of KH_2PO_4 0.06%, $MgSO_4$ 0.04%, sucrose 1.0%, *l*-leucine or *d*-leucine or the isomers of valine or glucose 0.4%. The biol. effect of *d*-leucine (which does not occur naturally) differed qualitatively from that of the natural *l*-leucine. The action of optical isomers on protoplasm is discussed. 16 references and 7 diagrams. W. R. H.



The killing action of the optically isomeric nicotines in relation to some problems of the evolution of the nervous system in animals S. E. Gauze and N. P. Smaragdova *Biol. Zhur.* 7, 412-28(in English, 428)(1938).—In *Protozoa, Coelenterata, Turbellaria, Rotatoria, Nemertini* and *Arthropoda* the optically isomeric nicotines are equally toxic. In *Annelida, Chaetognatha* and *Vertebrata* l- is more powerful than d-nicotine and, consequently, these animals possess some spatially specific receptive substance which is unequally inhibited by optically isomeric nicotines. A consideration of these groups shows a perfect correlation of the presence or absence of the spatial effect of nicotine with the presence and absence of the classic acetylcholine system of transmission of nervous impulses. In this way the spatial effect of nicotine could be used for the identification of the presence of the classic acetylcholine system in the neuro-effector synapses of the voluntary muscles. These results are discussed in relation to some problems of phylogeny of invertebrates. Fifteen references and 10 diagrams are given. W. R. Heim

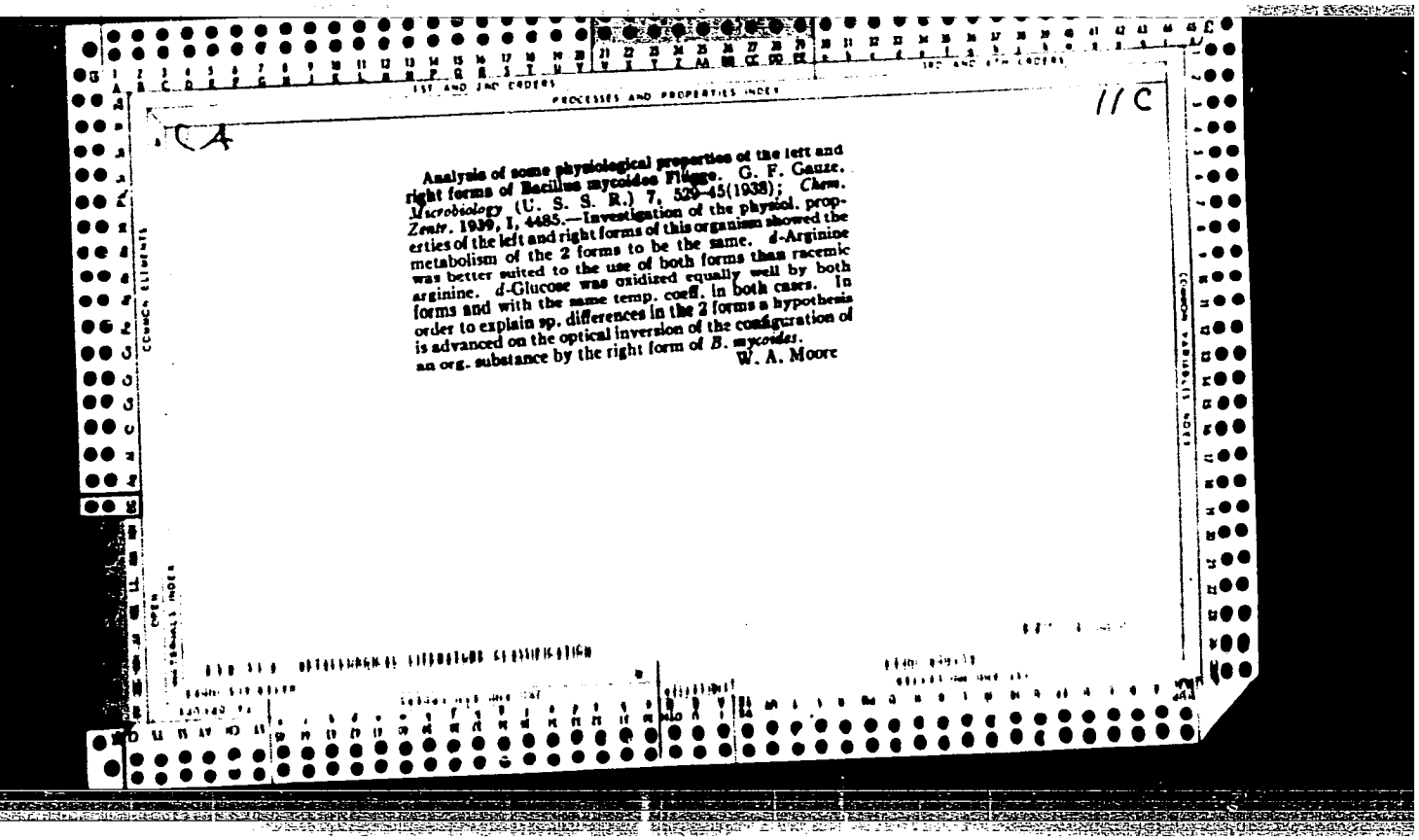


PROCESSES AND PROPERTIES INDEX

The action of optically isomeric cinchonines upon various functions of a cell with or without symbiotic zoöchlorellae. (Experiments with Paramecium caudatum and Paramecium bursaria). G. F. Gauze, N. P. Smaragdova and V. V. Alpatov. *Biol. Zhur.* 7, 763–75(in English, 776)(1938).—In *Paramaecium caudatum* spatial coëffs. of the action of cinchonines upon ectoplasmic and endoplasmic processes differ sharply from each other. In *Paramaecium bursaria* spatial coëffs. of the action of cinchonines upon ectoplasmic and endoplasmic processes coincide completely. It is probable that the simplification of the cell organization in *Paramaecium bursaria* is related to the presence of intercellar symbiotic algae in this species. Sixteen references, 7 tables and 6 curves are given.

W. R. Henn

A.S.T.M. METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

11 C

4 C

Analysis of some physiological properties of the left and right forms of Bacillus mycoides Flügge. G. F. Gauze. *Microbiology* (U. S. S. R.) 7, 529–45(1938); *Chem. Zentr.* 1939, I, 4485.—Investigation of the physiol. properties of the left and right forms of this organism showed the metabolism of the 2 forms to be the same. *d*-Arginine was better suited to the use of both forms than racemic arginine. *d*-Glucose was oxidized equally well by both forms and with the same temp. coeff. in both cases. In order to explain sp. differences in the 2 forms a hypothesis is advanced on the optical inversion of the configuration of an org. substance by the right form of *B. mycoides*.
W. A. Moore

GAUZE G. F.

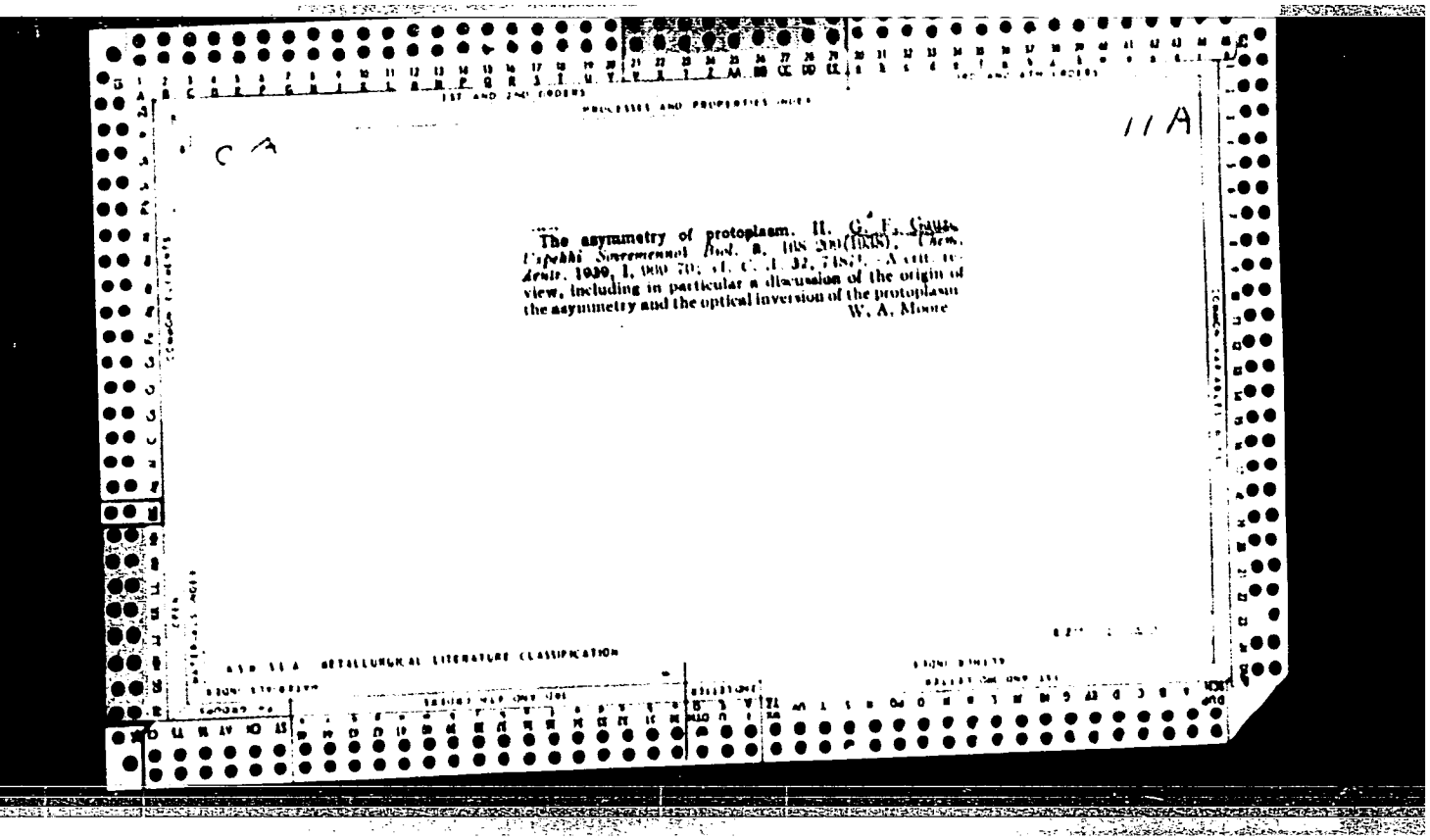
"Some Features In The Evolution Of Integuments In Fresh-Water Animals Analysed By Killing Action Of Optically Isomeric Organic Acids. Institute Of Zoology, Moscow State University." (p. 99) by Gauze G. F. and Smaragodva, N. P.

SO: PROCEEDS OF F JOURNAL OF GENERAL BIOLOGY. (Biologicheskii Zhurnal) Vol. VII, 1938, Nos 5-6

GAUSE, G. F.

"The wound healing and age." (p. 139) by G. F. Gause

SO: Advances in Contemporary Biology (Uspekki Sovremennoi Biologii) Vol. VIII, No. 1, 1938

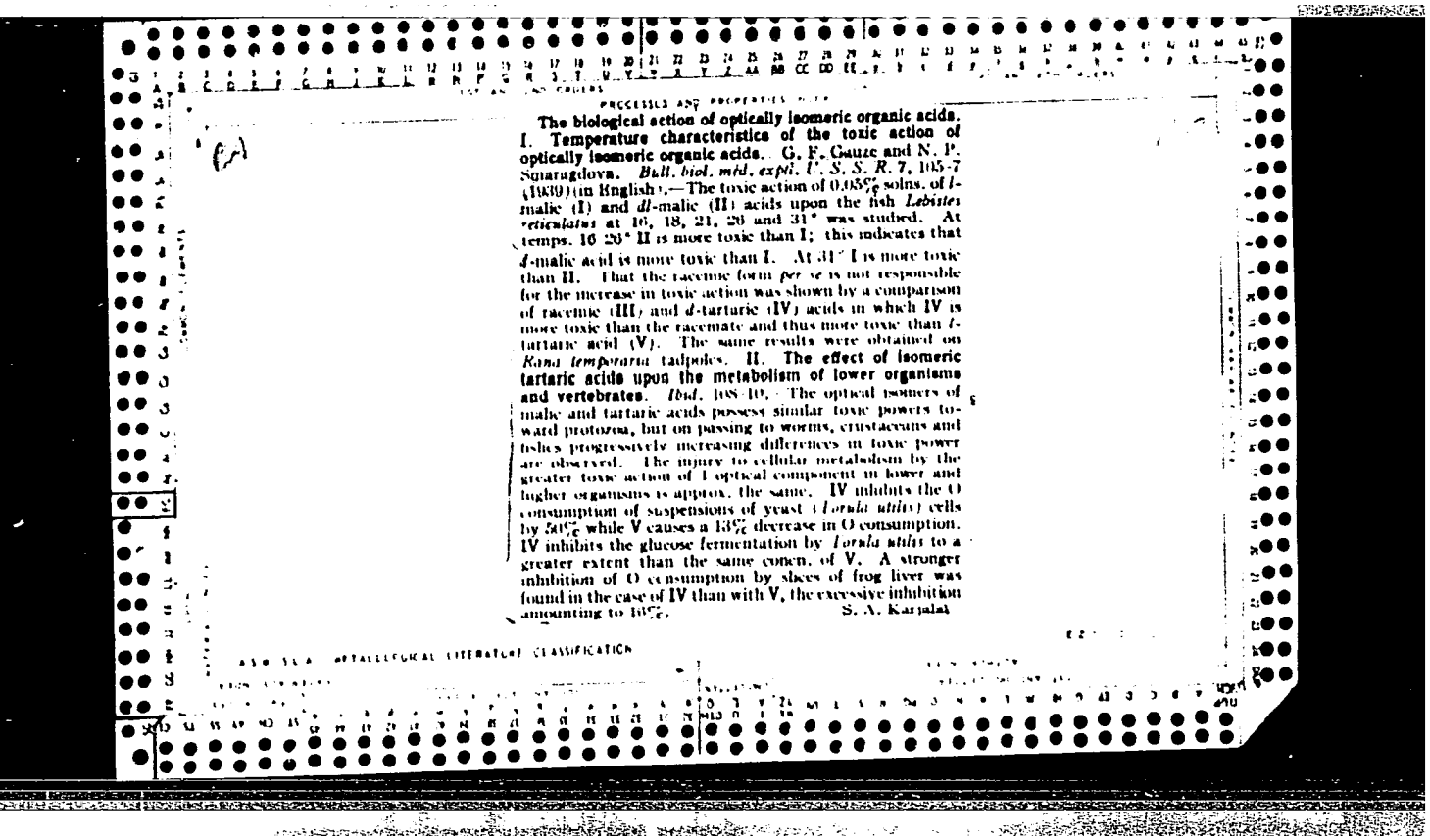


The asymmetry of protoplasm. II. G. F. Gause. *Uspekhi Sovremennoi Biol.* 8, 105-20(1938). *Arch. Zentr. Anat.* 1939, I, 000-70; cf. C. A. 32, 7185⁹. A critical review, including in particular a discussion of the origin of the asymmetry and the optical inversion of the protoplasm.
W. A. Moore

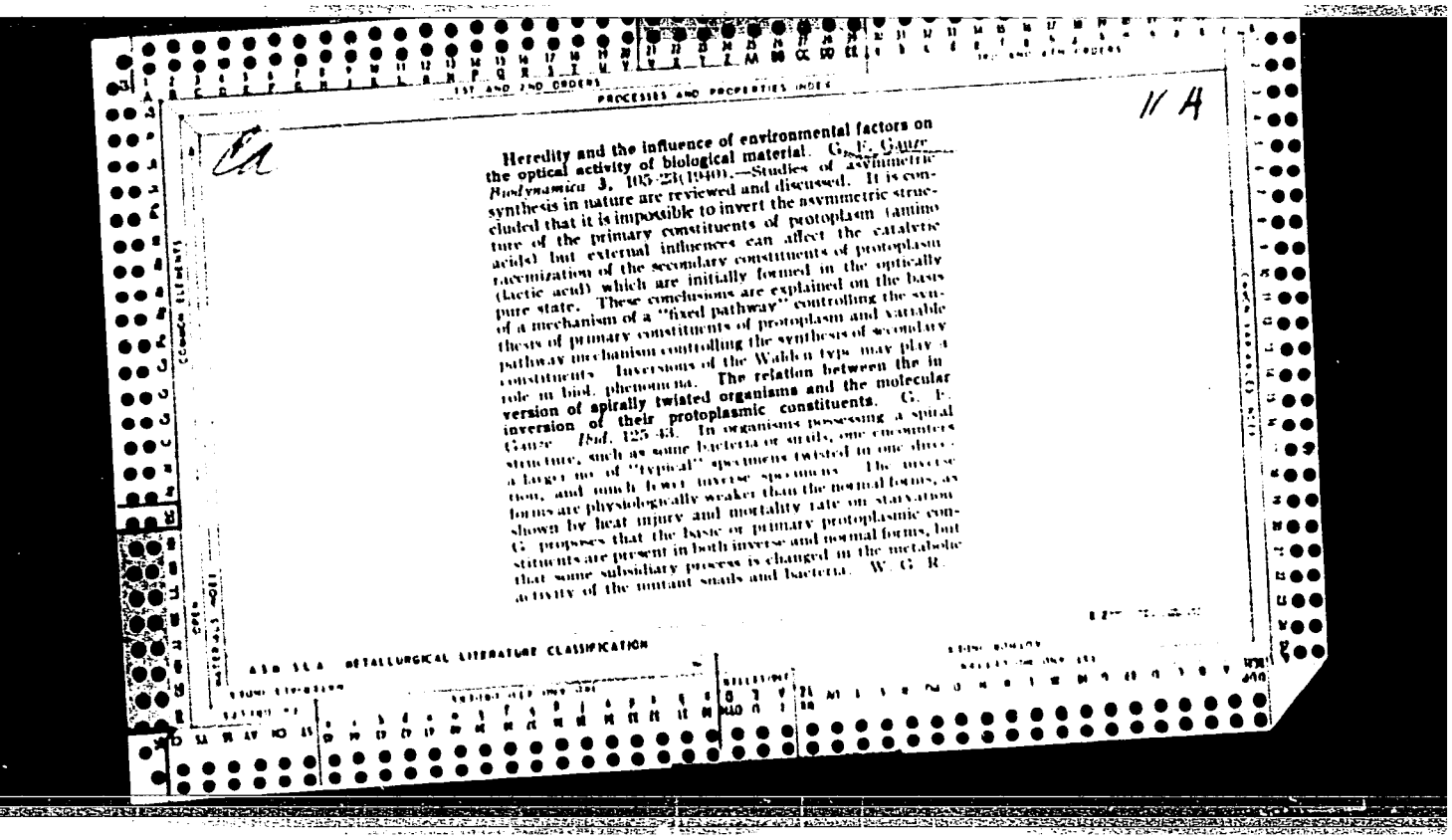
GAUSE, G. F.

"Sex and its Inheritance in Paramaecium." (p.479) by Gause, G. F.

SO: Advances in Modern Biology (Uspekki Sovremennoi Biology) Vol. IX, No. 3 1938



The biological action of optically isomeric organic acids. I. Temperature characteristics of the toxic action of optically isomeric organic acids. G. F. Gauze and N. P. Smaragdova. *Bull. biol. méd. expti. U. S. S. R.* 7, 105-7 (1939) (in English).—The toxic action of 0.05% solns. of *l*-malic (I) and *dl*-malic (II) acids upon the fish *Lebistes reticulatus* at 16, 18, 21, 26 and 31° was studied. At temps. 16 26° II is more toxic than I; this indicates that *d*-malic acid is more toxic than I. At 31° I is more toxic than II. That the racemic form *per se* is not responsible for the increase in toxic action was shown by a comparison of racemic (III) and *d*-tartaric (IV) acids in which IV is more toxic than the racemate and thus more toxic than *l*-tartaric acid (V). The same results were obtained on *Rana temporaria* tadpoles. II. **The effect of isomeric tartaric acids upon the metabolism of lower organisms and vertebrates.** *Ibid.* 108-10. The optical isomers of malic and tartaric acids possess similar toxic powers toward protozoa, but on passing to worms, crustaceans and fishes progressively increasing differences in toxic power are observed. The injury to cellular metabolism by the greater toxic action of 1 optical component in lower and higher organisms is approx. the same. IV inhibits the O consumption of suspensions of yeast (*Torula utilis*) cells by 50% while V causes a 13% decrease in O consumption. IV inhibits the glucose fermentation by *Torula utilis* to a greater extent than the same concn. of V. A stronger inhibition of O consumption by slices of frog liver was found in the case of IV than with V, the excessive inhibition amounting to 105%. S. A. Karjala



PROCESSES AND PROPERTIES INDEX

11 A

Heredity and the influence of environmental factors on the optical activity of biological material. G. F. Gauze. *Biodynamica* **3**, 105-23 (1940).—Studies of asymmetric synthesis in nature are reviewed and discussed. It is concluded that it is impossible to invert the asymmetric structure of the primary constituents of protoplasm (amino acids) but external influences can affect the catalytic racemization of the secondary constituents of protoplasm (lactic acid) which are initially formed in the optically pure state. These conclusions are explained on the basis of a mechanism of a "fixed pathway" controlling the synthesis of primary constituents of protoplasm and variable pathway mechanism controlling the synthesis of secondary constituents. Inversions of the Waldon type may play a role in biol. phenomena. **The relation between the inversion of spirally twisted organisms and the molecular inversion of their protoplasmic constituents.** G. F. Gauze. *Ibid.* 125-43. In organisms possessing a spiral structure, such as some bacteria or snails, one encounters a larger no. of "typical" specimens twisted in one direction, and much fewer inverse specimens. The inverse forms are physiologically weaker than the normal forms, as shown by heat injury and mortality rate on starvation. G. proposes that the basic or primary protoplasmic constituents are present in both inverse and normal forms, but that some subsidiary process is changed in the metabolic activity of the mutant snails and bacteria. W. G. R.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

GAUSE, G. R.

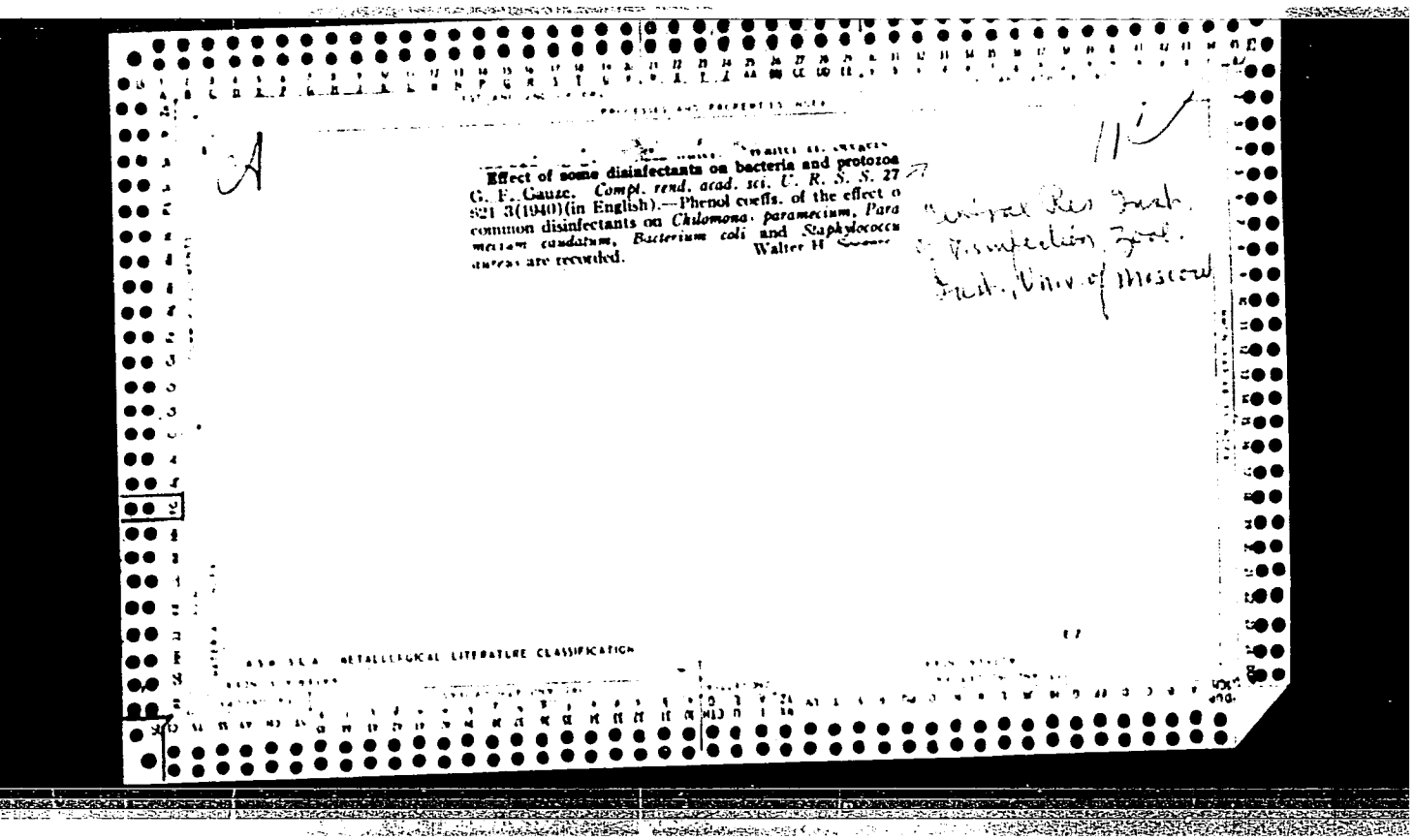
"Asymmetry of protoplasm and problem of cancer-cell" (p. 562) by Gause, G. R.

SO: Advances in Modern Biology (Uspekhi Sovremennoi Biologie) Vol. XII, No. 3, 1940

GAUSE, G. F.

"Frey-Wyssling, A., Submicroscopic Morphology of Protoplasms" (in German) (p. 572)
by Gause, G. F.

SO: Advances in Modern Biology, (Uspekhi Sovremennoi Biologii), Vol. XIII, No. 3, 1940



Effect of some disinfectants on bacteria and protozoa G. F. Gause. *Compt. rend. acad. sci. U. R. S. S.* 27 821 3(1940)(in English).—Phenol coeffs. of the effect o common disinfectants on *Chilomona paramecium*, *Para mecium caudatum*, *Bacterium coli* and *Staphylococcu aureus* are recorded.
Walter H

Central Res Inst. f. Disinfection, Epid. Inst., Univ. of Moscow

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

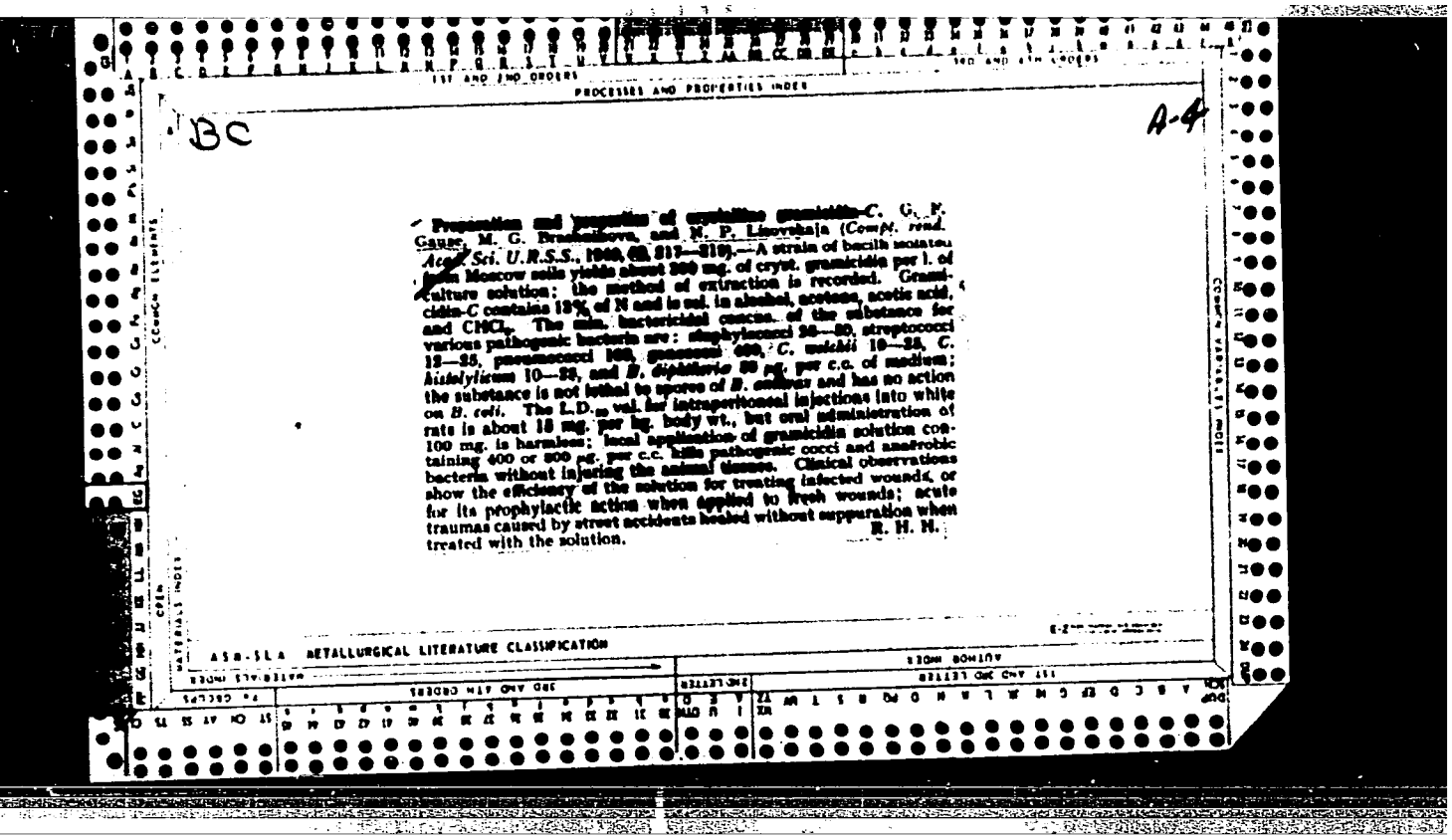
PROCESSES AND PROPERTIES INDEX

Ca

Central Res. Inst. of Disinfection, Soc. Prot. Univ. of Moscow Nos 6-7

Disinfective action of metallic silver. G. F. Gause. *Compt. rend. acad. sci. U. R. S. S.* 27, 722-4(1940)(in English).—Study of the lethal action of Ag water and of $AgNO_3$ on *Paramecium caudatum* yielded a toxicity curve expressed by Ostwald's equation $y = k(x - n)^m$, where y is killing time, x the concn. of the toxic substance and n its min. lethal dose. The const. m characterizes the rapidity of the increase in toxicity with concn. The mechanism of killing the cell is the same in solns. of metallic Ag and weak solns. of Ag salts. A. H. Krappe

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

BC

A-4

Preparation and properties of crystalline gramicidin-C. G. F. Gause, M. G. Brazhnikova, and N. P. Lisovskaja (*Compt. rend. Acad. Sci. U.R.S.S.*, 1940, 28, 813—819).—A strain of bacillus isolated from Moscow soils yields about 200 mg. of cryst. gramicidin per l. of culture solution: the method of extraction is recorded. Gramicidin-*C* contains 13% of N and is sol. in alcohol, acetone, acetic acid, and $CHCl_3$. The min. bactericidal concns. of the substance for various pathogenic bacteria are: staphylococci 30—80, streptococci 12—35, pneumococci 100, gonococci 600, *C. welchii* 10—35, *C. histolyticum* 10—30, and *B. diphtheriæ* 80 µg. per c.c. of medium; the substance is not lethal to spores of *B. anthracis* and has no action on *B. coli*. The $L.D._{50}$ val. for intraperitoneal injections into white rats is about 18 mg. per kg. body wt., but oral administration of 100 mg. is harmless; local applications of gramicidin solution containing 400 or 800 µg. per c.c. kills pathogenic cocci and anaerobic bacteria without injuring the animal tissues. Clinical observations show the efficiency of the solution for treating infected wounds, or for its prophylactic action when applied to fresh wounds; acute traumas caused by street accidents healed without suppuration when treated with the solution. R. H. H.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

ZAYED, G. F.

"On the Importance of Hybridization for Insect Populations." (p. 105) by Zayed, G. F.

SO: Zhurnal obshchey Biologii, (Zhurnal obshchey Biologii), 1950, Vol. I, No. 1

GUASE, G. F.

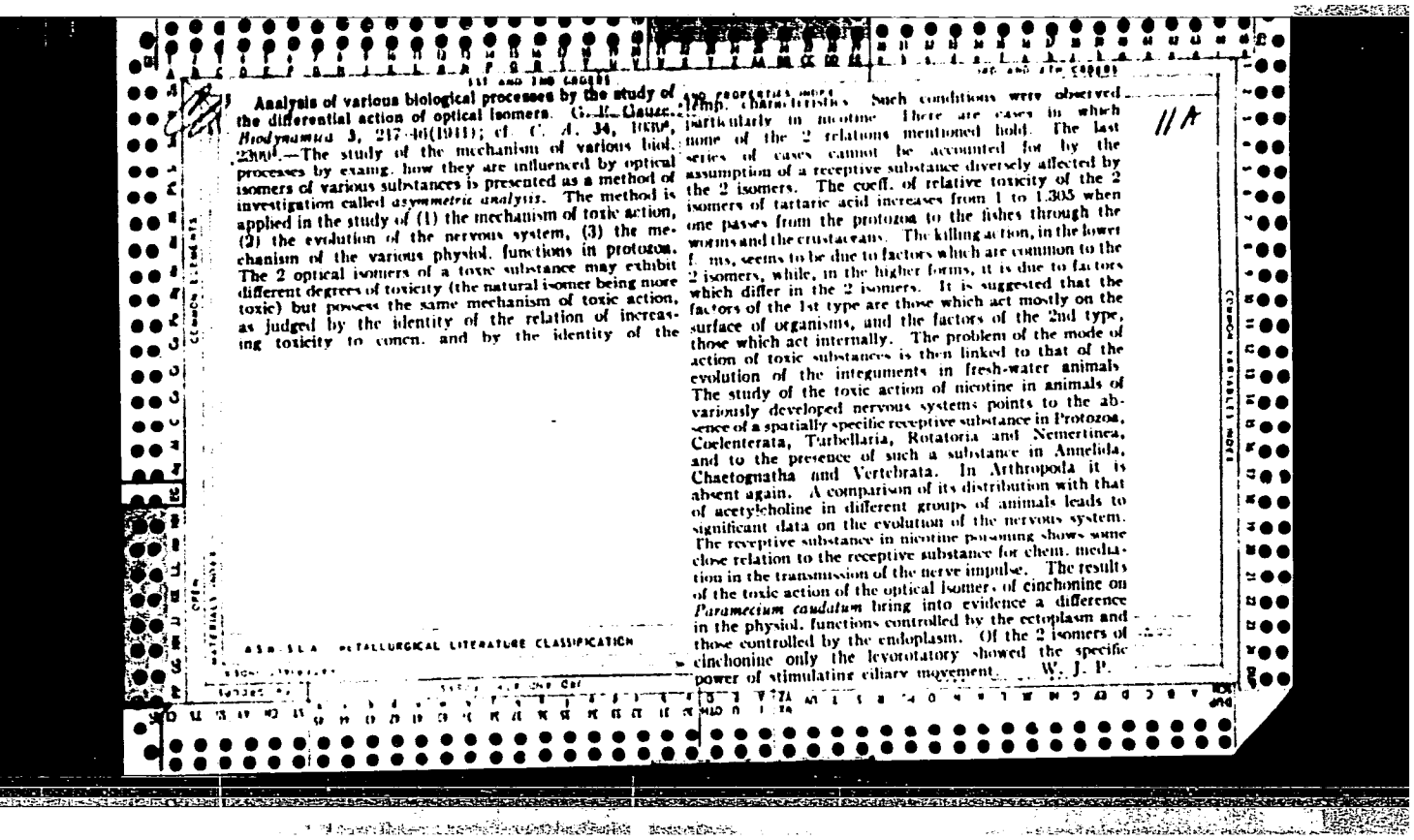
"The problem of stabilizing selection," (p. 193) by G. F. Guase.

SO: Journal of General Biology (Zhurnal Obschei Biologii) Volume II No. 2, 1941.

GAUZE, G. F.

"The reaction of living matter to external effects. Denaturation theory of trauma and irritation," (p. 301) by D. N. Nasonov, V. Ya. Aleksandrov, G. F. Gauze.

SO: Journal of General Biology (Zhurnal Obschei Biologii) Volume II No. 2, 1941.



Analysis of various biological processes by the study of the differential action of optical isomers. G. F. Gause. *Biodynamica* 3, 217-40(1911); cf. *C. A.* 34, 1680, 2300.—The study of the mechanism of various biol. processes by examg. how they are influenced by optical isomers of various substances is presented as a method of investigation called *asymmetric analysis*. The method is applied in the study of (1) the mechanism of toxic action, (2) the evolution of the nervous system, (3) the mechanism of the various physiol. functions in protozoa. The 2 optical isomers of a toxic substance may exhibit different degrees of toxicity (the natural isomer being more toxic) but possess the same mechanism of toxic action, as judged by the identity of the relation of increasing toxicity to concn. and by the identity of the type characteristics. Such conditions were observed particularly in nicotine. There are cases in which none of the 2 relations mentioned hold. The last series of cases cannot be accounted for by the assumption of a receptive substance diversely affected by the 2 isomers. The coeff. of relative toxicity of the 2 isomers of tartaric acid increases from 1 to 1.305 when one passes from the protozoa to the fishes through the worms and the crustaceans. The killing action, in the lower forms, seems to be due to factors which are common to the 2 isomers, while, in the higher forms, it is due to factors which differ in the 2 isomers. It is suggested that the factors of the 1st type are those which act mostly on the surface of organisms, and the factors of the 2nd type, those which act internally. The problem of the mode of action of toxic substances is then linked to that of the evolution of the integuments in fresh-water animals. The study of the toxic action of nicotine in animals of variously developed nervous systems points to the absence of a spatially specific receptive substance in Protozoa, Coelenterata, Turbellaria, Rotatoria and Nemertinea, and to the presence of such a substance in Annelida, Chaetognatha and Vertebrata. In Arthropoda it is absent again. A comparison of its distribution with that of acetylcholine in different groups of animals leads to significant data on the evolution of the nervous system. The receptive substance in nicotine poisoning shows some close relation to the receptive substance for chem. mediation in the transmission of the nerve impulse. The results of the toxic action of the optical isomers of cinchonine on *Paramecium caudatum* bring into evidence a difference in the physiol. functions controlled by the ectoplasm and those controlled by the endoplasm. Of the 2 isomers of cinchonine only the levorotatory showed the specific power of stimulating ciliary movement. W. J. P.

GAUSE, G. F.

"Ecological adaptivity." (p. 227) by G. F. Gause

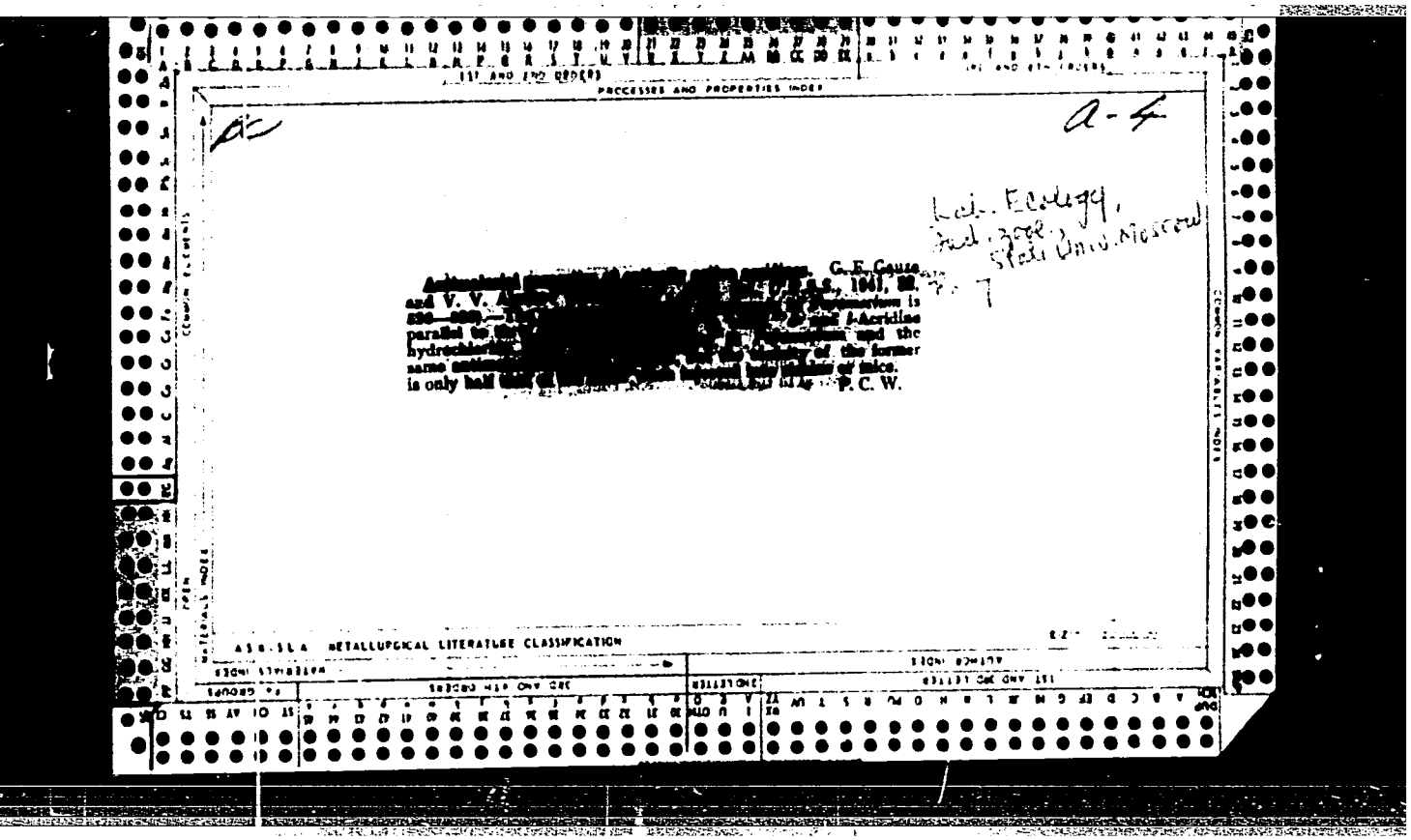
SO: Advances in Modern Biology (Uspekhi Sovremennoi Biologie) Vol. XIV, No. 2, 1941

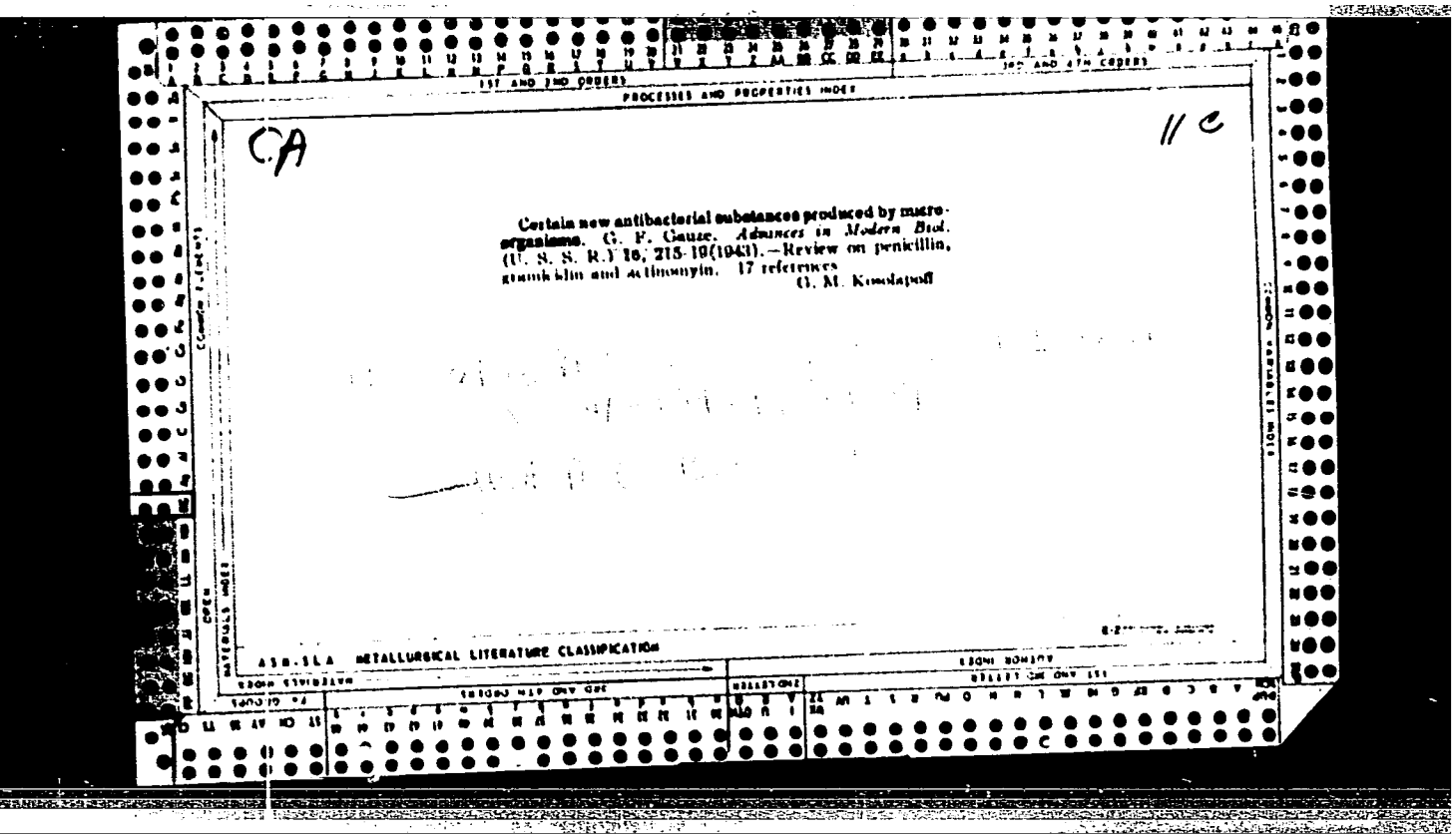
GAUSE, G. F.

"Lukine, E. I., Darwinism and Geographical regularities in variability of organism." (p. 558)
Rev. by G. F. Gause.
SO: Advances in Modern Biology (Uspekhi Sovremennoi Biologie) Vol. XIV, No. 3, 1941

GAUSE, G. F.

"On the Inverse Relation Between Acquired and Inherent Properties of Organisms," Dokl. AN SSSR, 30, No.3, 1941





CA

11 C

Certain new antibacterial substances produced by micro-organisms. G. F. Gauze. *Advances in Modern Biol.* (U. S. S. R.) 16, 215-19(1943).—Review on penicillin, gramicidin and actinomycin. 17 references
G. M. Kondakoff

GAUZE, G. F.

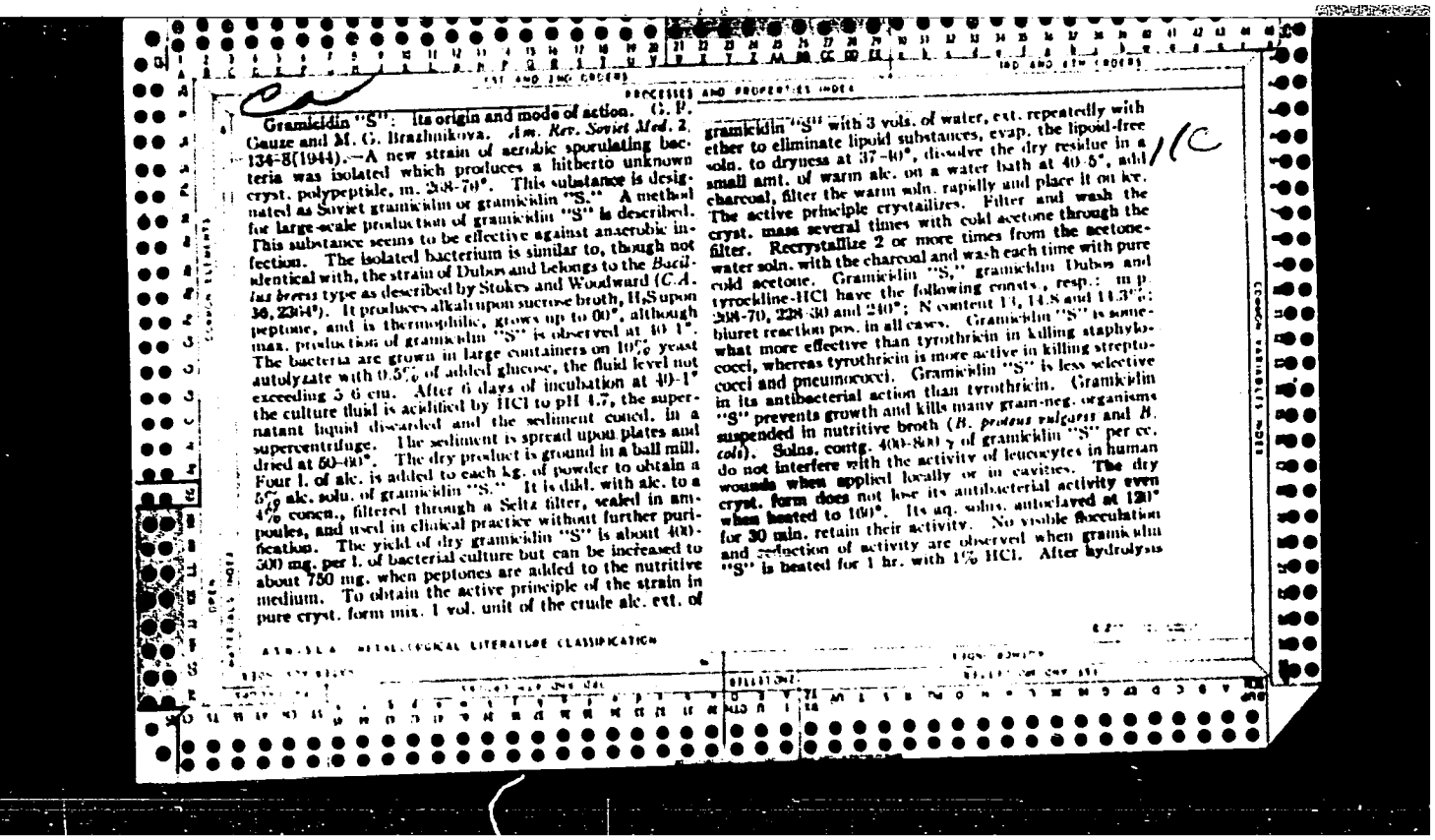
"The Struggle for Existance and the Problem of Wound Healing." (p. 530) by Gauze, G. F. (Moscow)

SO: Advances in Modern Biology (Uspekhi Sovremennoi Biologii) Vol. 16, No. 5, 1943.

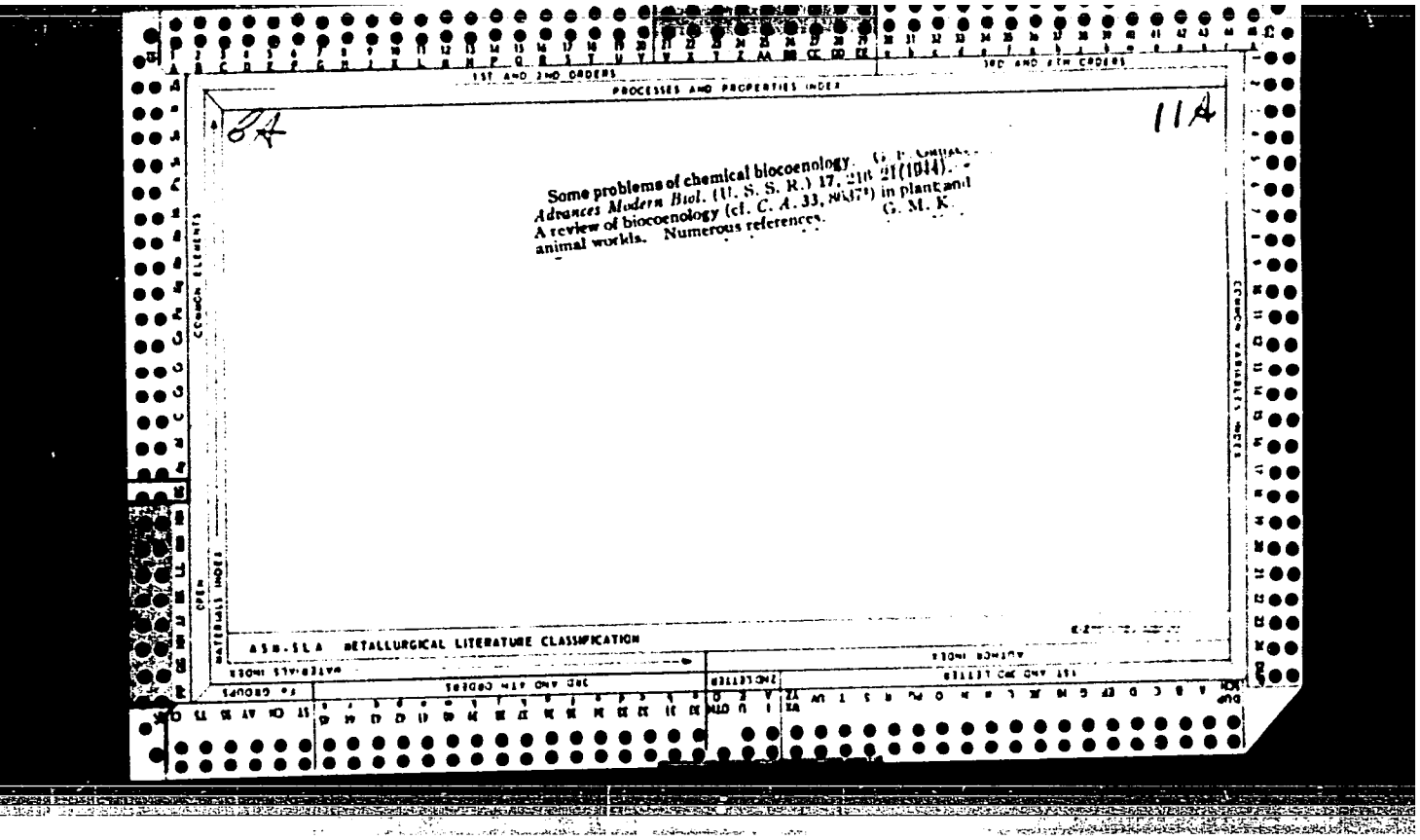
GAUZE, G. F.

"The Problem of Freezing." (p. 571) by Sheinis, V. N. (Moscow 1943, 96 pages)
Reviewed by G. F. Gauze (Moscow)

SO: Advances in Modern Biology (Uspekhi Sovremennoi Biologii) Vol. 16, No. 5, 1943.



Gramicidin "S": its origin and mode of action. G. F. Gause and M. G. Brazhnikova. *Am. Rev. Soviet Med.* 2, 134-8(1944).—A new strain of aerobic sporulating bacteria was isolated which produces a hitherto unknown cryst. polypeptide, m. 268-70°. This substance is designated as Soviet gramicidin or gramicidin "S." A method for large-scale production of gramicidin "S" is described. This substance seems to be effective against anaerobic infection. The isolated bacterium is similar to, though not identical with, the strain of Dubos and belongs to the *Bacillus brevis* type as described by Stokes and Woodward (*C.A.* 36, 2304⁹). It produces alkali upon sucrose broth, H_2S upon peptone, and is thermophilic, grows up to 60°, although max. production of gramicidin "S" is observed at 40-1°. The bacteria are grown in large containers on 10% yeast autolyzate with 0.5% of added glucose, the fluid level not exceeding 5-6 cm. After 6 days of incubation at 40-1° the culture fluid is acidified by HCl to pH 4.7, the supernatant liquid discarded and the sediment concd. in a supercentrifuge. The sediment is spread upon plates and dried at 50-60°. The dry product is ground in a ball mill. Four l. of alc. is added to each kg. of powder to obtain a 5% alc. soln. of gramicidin "S." It is dild. with alc. to a 4% concn., filtered through a Seitz filter, sealed in ampoules, and used in clinical practice without further purification. The yield of dry gramicidin "S" is about 400-500 mg. per l. of bacterial culture but can be increased to about 750 mg. when peptones are added to the nutritive medium. To obtain the active principle of the strain in pure cryst. form mix. 1 vol. unit of the crude alc. ext. of gramicidin "S" with 3 vols. of water, ext. repeatedly with ether to eliminate lipoid substances, evap. the lipoid-free soln. to dryness at 37-40°, dissolve the dry residue in a small amt. of warm alc. on a water bath at 40-5°, add charcoal, filter the warm soln. rapidly and place it on ice. The active principle crystallizes. Filter and wash the cryst. mass several times with cold acetone through the filter. Recrystallize 2 or more times from the acetone-water soln. with the charcoal and wash each time with pure cold acetone. Gramicidin "S," gramicidin Dubos and tyrocidine-HCl have the following consts., resp.: m.p. 268-70, 228-30 and 240°; N content 14, 14.8 and 14.3%; biuret reaction pos. in all cases. Gramicidin "S" is somewhat more effective than tyrothricin in killing staphylococci, whereas tyrothricin is more active in killing streptococci and pneumococci. Gramicidin "S" is less selective in its antibacterial action than tyrothricin. Gramicidin "S" prevents growth and kills many gram-neg. organisms suspended in nutritive broth (*B. proteus vulgaris* and *B. coli*). Solns. contg. 400-800 γ of gramicidin "S" per cc. do not interfere with the activity of leucocytes in human wounds when applied locally or in cavities. The dry cryst. form does not lose its antibacterial activity even when heated to 100°. Its aq. solns. autoclaved at 120° for 30 min. retain their activity. No visible flocculation and reflection of activity are observed when gramicidin "S" is heated for 1 hr. with 1% HCl. After hydrolysis



GAUSE, G. F.

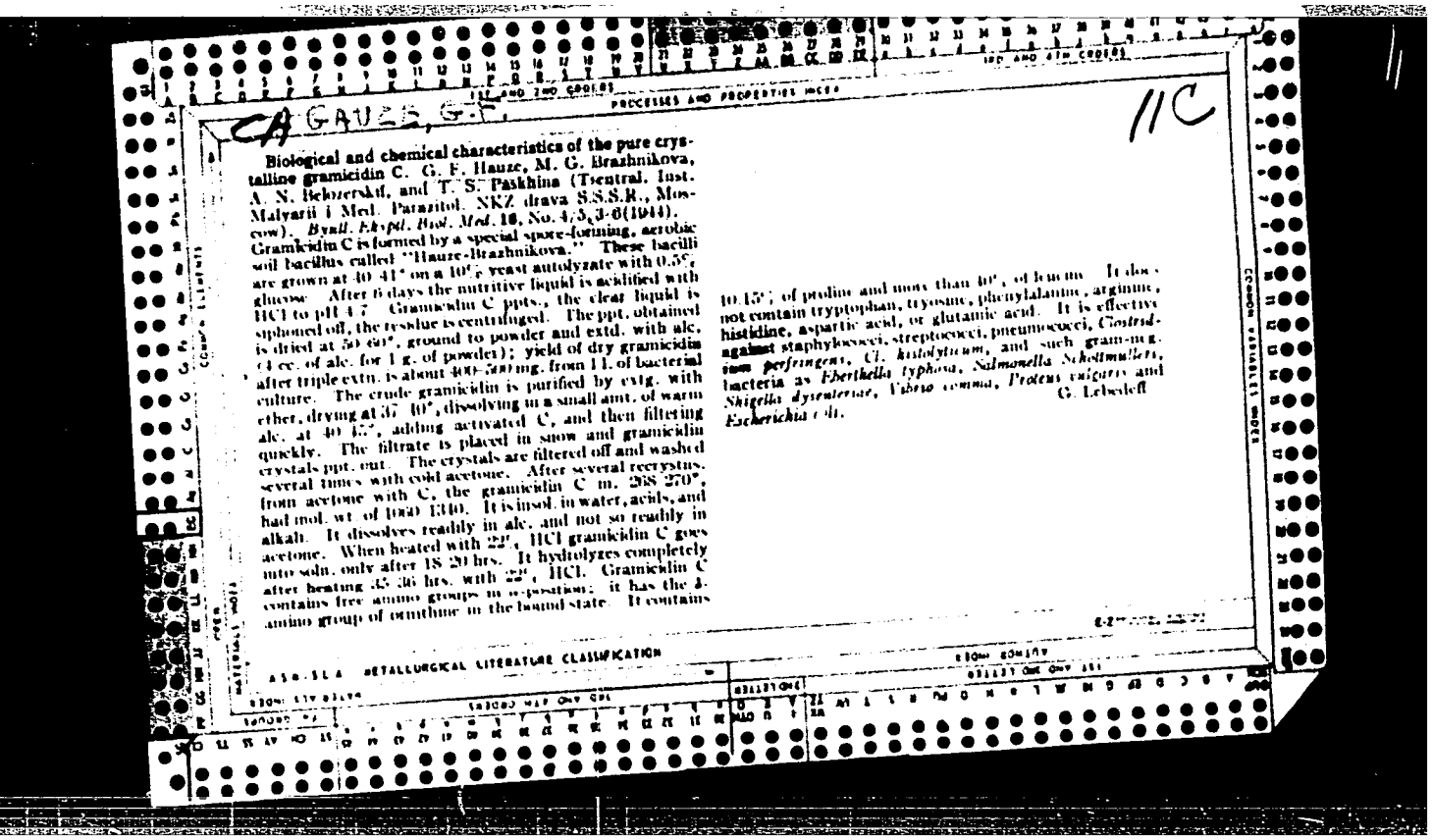
"Nucleic Acid and Malignant Growth" by Gause, G. F. (Moscow).

SO: Advances in Contemporary Biology (Uspekhi Sovremennoi Biologii) Vol. 17, 1944, No. 3

GAUSE, G. F.

"Evolution: The Modern Synthesis" (page 406) by Huxley, J., Reviewed by Gause, G. F.

SO: Advances in Modern Biology, (Uspekhi Sovremennoi Biologii), Vol. 18, 1944, No. 3



GAUZE, G. F.

11C

Biological and chemical characteristics of the pure crystalline gramicidin C. G. F. Hauze, M. G. Brazhnikova, A. N. Belozerskii, and T. S. Paskhina (Tsentral. Inst. Malyarii i Med. Parazitol. NKZ drava S.S.S.R., Moscow). *Byull. Eksptl. Biol. Med.* 18, No. 4/5, 3-6(1944). Gramicidin C is formed by a special spore-forming, aerobic soil bacillus called "Hauze-Brazhnikova." These bacilli are grown at 40-41° on a 10% yeast autolyzate with 0.5% glucose. After 6 days the nutritive liquid is acidified with HCl to pH 4.7. Gramicidin C ppts., the clear liquid is siphoned off, the residue is centrifuged. The ppt. obtained is dried at 50-60°, ground to powder and extd. with alc. (4 cc. of alc. for 1 g. of powder); yield of dry gramicidin after triple extn. is about 400-500 mg. from 1 l. of bacterial culture. The crude gramicidin is purified by extg. with ether, drying at 37-40°, dissolving in a small amt. of warm alc. at 40-45°, adding activated C, and then filtering quickly. The filtrate is placed in snow and gramicidin crystals ppt. out. The crystals are filtered off and washed several times with cold acetone. After several recrystns. from acetone with C, the gramicidin C m. 268-270°, had mol. wt. of 1060-1340. It is insol. in water, acids, and alkali. It dissolves readily in alc. and not so readily in acetone. When heated with 2% HCl gramicidin C goes into soln. only after 18-20 hrs. It hydrolyzes completely after heating 35-36 hrs. with 2% HCl. Gramicidin C contains free amino groups in preparations; it has the ε-amino group of ornithine in the bound state. It contains 10-15% of proline and more than 10% of leucine. It does not contain tryptophan, tyrosine, phenylalanine, arginine, histidine, aspartic acid, or glutamic acid. It is effective against staphylococci, streptococci, pneumococci, *Clostridium perfringens*, *Cl. histolyticum*, and such gram-negative bacteria as *Eberthella typhosa*, *Salmonella Schottmülleri*, *Shigella dysenteriae*, *Vibrio comma*, *Proteus vulgaris* and *Escherichia coli*.

G. Lebedeff

A54-51A METALLURGICAL LITERATURE CLASSIFICATION

CA

PROCESSES AND PROPERTIES INDEX

Preparation and properties of crystalline gramicidin. C. G. F. Gause, M. G. Brazhnikova and N. P. Lisovskaya. *Doklady Akad. Nauk S. S. S. R.* 43, 228-31; *Compt. rend. acad. sci. U. R. S. S.* 43, 217-19(1944)(in English).—A recently isolated, new strain of soil bacillus when grown in a 10% yeast autolyzate for 6 days produced about 300 mg. of cryst. gramicidin (I) (cf. *C. A.* 33, 8671) per l. of culture, from which I was pptd. in impure form by adding HCl to a pH of 4.7. The ppt. was filtered off, extd. 3 times with alc., the ext. concd. *in vacuo* to 1/10 its vol. and dild. with 10 vols. of a 1% aq. NaCl soln. again to ppt. I. This ppt. was then dissolved in alc. to give 20 mg. of I per 0.5 cc. and sealed in ampoules. In treating wounds 20-mg. ampoules were dissolved in 25-50 cc. of sterile water and this soln. was applied with tampons. Good results were obtained with gas gangrene infections of the hip of guinea pigs and on white rats having hip wounds infected with soil organisms. I is bactericidally effective at concns. of 12-400 γ per cc. against cultures of staphylococci, pneumococci, gonococci and *C. diphtheriae*. J. W. Perry

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

GAUZE, G. F.

"Variation and Heredity Among Microscopic Organisms" (p. 132) by Gauze, G. F. (Moscow)

SO: Advances in Modern Biology (Uspekhi Sovremennoi Biologii) Vol. XIX, No. 1, 1945.

GAUZE, G. F.

"The Biological Field" (p. 283) Reviewed by Gauze, G. F. (Moscow, 1944, 156 pages)

SO: Advances in Modern Biology (Uspekhi Sovremennoi Biologii) Vol. XIX, No. 2, 1945.

GAUSE, G. F.

"Gramicidin "S" " (p. 345) by Gause, G. F.

SO: Advances in Modern Biology (Uspekhi Sovremennoi Biologii) Vol. XX, No.3, 1945.

Inst Malaria Med Parasitol. Moscow

GAUZE, G. F., AND YE. I. KOROBKOVA

"Action of Streptomycin on the Plague Bacillus and Cholera Vibrio," ZhMEI, 7, 54, 1946

Litmocidin, a new antibiotic formed by Proactinomyces cyaneus. G. F. Gauze (Acad. Med. Sci., Moscow). *Mikrobiologiya* 15, 367-71(1946); cf. C.A. 40, 5799[1].—A variety of *Proactinomyces cyaneus*, isolated from a soil in South Russia, grew on a variety of mediums but produced its litmus-like pigment only if peptone or Chottinger broth base (I) was present. In a neutral medium contg. (per l. of tapwater) peptone 5, I 3, glucose 10, NaCl 5, Fe sulfate 0.01, and agar 20 g., the blue pigmentation was copious and an antibiotic (II) was formed. The bacteriostatic concn. of II in nutrient broth (in p.p.m.) was: *Staphylococcus aureus* 0.25-0.5; *Streptococcus hemolyticus* 0.5-2.5; *Str. viridans* 2; *Mycobacterium tuberculosis* very low; *Vibrio comma* 0.5-2; *Bact. dysenteriae* (Shiga or Flexner strain) 100; *Bact. typhosum*, *Bact. paratyphosum* A or B, and *Esch. coli*, all less than 1000. But no chemotherapeutic power was observed against septicemia in mice infected with *Staph. aureus*, to which II was highly toxic *in vitro*. The name *P. cyaneus* var. *antibioticus* is given to the organism, and *litmocidin* to II. J. F. S.

GAUSE, G. F.

GAUSE, G. F.

"Biological action of uranium." (p. 433) by Gause, G. F.

SO: Advances in Modern Biology (Uspekhi Sovremennoi Biologie) Vol. XXII, No. 3, 1946.

GAUZE, G. F.

"Lekarstvennyye veshchestva mikrobov (Microbial Medicinal Substances), published by AMN SSSR, Moscow, 1947

GAUZE, G. F.

"Recent Successes in the Study of Antibiotics," ZhMEI, 3, 6, 1947

GAUZE, G. F.

"Soviet Gramicidin and New Antibiotics," in the book: Antibiotiki, 12-14, 1947

GAUZE G. F.

USSR/Medicine - Antibiotics Mar 1947
Medicine - Ophthalmology

"Antibiotics and Optical Activity," G. F. Gauze, 8 pp

"Uspekhi Covremennoy Biologii" Vol XXIII, No 3

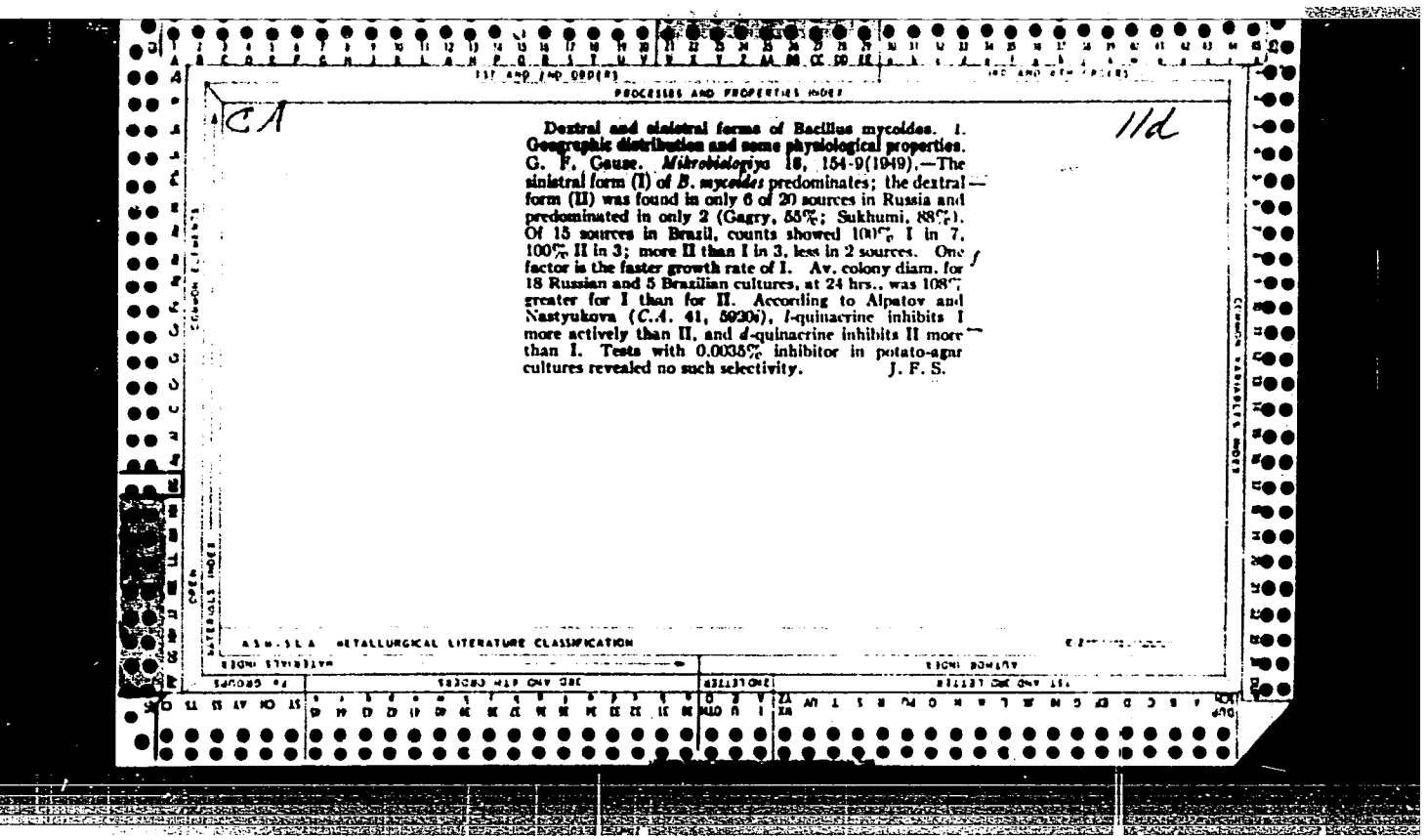
Discusses optical inversion of the penicillin molecule, the streptomycin molecule, and gramicidin S, the biological activity of optical isomers, and the restraining action of inverted molecules on enzymatic processes.

10T50

GAUZE, G. F. (Prof)

The Problem of Antibiotics in the Light of Theory

Vestnik Ak Med Nauk SSSR, No 1, 1948



CA

11d

Dextral and sinistral forms of Bacillus mycoides. I. Geographic distribution and some physiological properties. G. F. Gause. *Mikrobiologiya* 18, 154-9(1949).—The sinistral form (I) of *B. mycoides* predominates; the dextral form (II) was found in only 6 of 20 sources in Russia and predominated in only 2 (Gagry, 55%; Sukhumi, 88%). Of 15 sources in Brazil, counts showed 100% I in 7, 100% II in 3; more II than I in 3, less in 2 sources. One factor is the faster growth rate of I. Av. colony diam. for 18 Russian and 5 Brazilian cultures, at 24 hrs., was 108% greater for I than for II. According to Alpatov and Nastyukova (*C.A.* 41, 5920i), *l*-quinacrine inhibits I more actively than II, and *d*-quinacrine inhibits II more than I. Tests with 0.0035% inhibitor in potato-agar cultures revealed no such selectivity. J. F. S.

GAUZE, T. F.

PA 44/49T81

USSR/Medicine - Microbiology Mar/Apr 49
Medicine - Bacteria, Mycoides

"Tendencies of Bacillus Mycoides to Spiral to the Right or Left," G. F. Gauze, Inst of Malaria and Med Parasitol, Acad Med Sci USSR, 6 pp

"Mikrobiologiya" Vol XVIII, No 2

Left-spiraling B. mycoides are found in central USSR, right-spiraling bacteria in Trans-caucasus region. South American soil4(Brazil) contain many right-spiraling forms rarely found in Europe. Left-develop faster than the

LC 44/49T81

USSR/Medicine - Micro-biology (Contd) Mar/Apr 49

right-spiraling bacteria due to relatively weaker physiological condition of the latter. Both right- and left-spiraling B. mycoides are inhabited by both optical isomers of atabrine. Submitted 24 Mar 48.

LC 44/49T81

GA

Results of recent research on antibiotics. G. F. Gauze (Acad. Med. Sci., Moscow). *Mikrobiologiya* 19, 79-91 (1950).—33 references. Julian F. Smith No.1

Antibiotics Lab., AMS USSR

Translation W-19856, 8 Oct 51

GAUZE, G.F.

HAUSE, G.F.

Certain problems in geography of microorganisms. Usp. sovrem. biol. 29 no.2:263-272 Mr-Ap '50. (CIML 19:2)

1. Moscow.

GAUZE, G.F.

Therapeutic action of antibiotics according to the Pavlovian theory. Bratisl. lek. listy 31 no. 11-12 1081-1087 1951. (CLML 23:1)

1. Of the Laboratory of Antibiotics of the Academy of Medical Sciences, USSR.

GAUZE, G.F., BRAZHNIKOVA, M.G.

Antibiotics

Effect of albomycin upon bacteria. Novosti med. no. 23, 1951.

9. Monthly List of Russian Accessions, Library of Congress, [illegible] 1953. Unclassified.
1952

GAUZE, G. F.

"Recent USSR Work in the Field of Antibiotics," Znaniye Publishing House, Moscow, 31 pages, 1952

Translation W-25279, 10 Feb 53

GAUZE, G. F.

Gramitsidin C i ego primenie Gramicidin C and its use Moskva, Medgiz, 1952. 152 p.
(Biblioteka prakticheskogo vracha)

1. Antibiotics.

GAUZE, G.F.

Selective action of antibiotics in the light of comparative biochemistry. Uspekhi Sovremennoy Biol. 34, 354-66 '52. (MLRA 5:12)
(CA 47 no.14:7036 '53)

USSR/Biology, Agriculture - Anti- Jun 52
biotics, Plant
Diseases

"Use of Antibiotics in Combating Plant Diseases," Prof G. F. Gauze, Lab of Antibiotics, Acad Med Sci USSR

"Priroda" Vol 41 No 6, pp 105-107

Describes N. A. Krasil'nikov's work on the resorption of penicillin by lettuce through its root system ("Dok Ak Nauk SSSR" Vol 79, No 5, p 879,1951); the use of griseofulvin, an antibiotic which is effective in combating fungus diseases of oats, lettuce, and tomatoes; Krasil'nikov's results on combating bacterial diseases of cotton and citrus plants with antibiotics.

22976

Review - B-7795, 10 Aug 54

22976

GAUZE, G.F.

Lektsii po antibiotikam (Lectures on antibiotics). Izd. 2-e, pererabot. i dop. Moskva, 1953. 251 p. (Akad. med. nauk SSSR).

SO: Monthly List of Russian Accessions, Vol. 7, No. 5, August 1954

FD-1520

USSR/Medicine - Cancer Research

Card 1/1 : Pub 122-5/14

Author : Gause, G. F., Professor

Title : Concerning effects of antibiotics on the growth of malignant tumors

Periodical : Vest. AMN SSSR, 4, 29-34, Oct-Dec 1954

Abstract : Although no antibiotic has yet been found that would have practical application in the treatment and prevention of cancer in man, experimental data now on hand is interesting enough to encourage further research. The trend in recent years consisted of search for antibiotics that posses specific power to check aerobic glycolisis and that are able to suppress the growth of malignant tumors. Difficulties encountered so far have been due to the fact that specific biochemical peculiarities of cancerous cells are not well known. When that is discovered it may become possible to develop antibiotics with specific action on the biochemical process peculiar to those cells. Graphs.

Institution : Institute for the Investigation of New Antibiotics, Academy of Medical Sciences, USSR

Submitted :

GAUZE, G. F. Dr. Biol. Sci.

"Recent Studies on Albomycin, a New Antibiotic," published in British Medical Journal, p. 1177, 12 Nov 55

Gauze was a member of the team of six Russian doctors who recently visited the United Kingdom.

GAUZE, G. F.

Certain problems in the classification of Actinomyces. Mikrobiologiia 24 no.1:103-113 Ja-F '55. (MLRA 8:4)

1. Institut po izyskaniyu novykh antibiotikov Akademii meditsinskikh nauk SSSR, Moskva.
(ACTINOMYCES, classif.)

GAUZE, G. F.

"The Effect of Antibiotics on the Growth of Viruses and Malignant Tumors", a report presented at the First All-Union Conference Devoted to the Clinical-Experimental Study of Antibiotics, Moscow, 25-27 April 1955, Antibiotiki, No 1, 1956

USSR/Tumors

U-4

Abs Jour : Ref Zhur - Biol., No 6, 1958, No 27770

Author : Gauze, G.F.
Inst : Not Given
Title : On the Effects of Antibiotics on the Growth of Viruses and Malignant Tumors.

Orig Pub : V sb.: Antibiotiki. Eksperim.-klinich. izuch. M., 1956, 103-109

Abstract : Of the numerous antibiotics known at present, only 7 have a weak antiviral activity; erlichin, achromoviro-mycin, netropein, a crystalline substance from Proactinomyces formica, cardicin, olonin and viscosin. No relationship between antibacterial and antiviral activities of these antibiotics, as well as between their efficacy against certain viruses in vitro and in vivo was established. There are no theoretical grounds which may indicate possible methods of search for antibiotics possessing antivirus activity, hence, such studies are entirely impirical. A number of antibiotics with antineo-

Card : 1/2

29

the X-ray therapy or nitrogen mustard (embichine).

S. F. Gauze,

USSR/Microbiology. Antibiosis, and Symbiosis, Antibiotics. F-2

Abs Jour : Ref. Zhur-Biologiya, No 1, 1957, 515

Author : S. F. Gauze, O. L. Popova, G. V. Kochetkova
Inst :
Title : New Method of Selection of the Producer of Albomycin

Orig Pub : Antibiotiki, 1956, 1, No 1, 18-20

Abstract : When a suspension of spores of Actinomyces subtropicus, the producer of albomycin, is subjected to ultra-violet light, in the subsequent selection it was not possible to isolate strains with a greater productivity of albomycin (1) then those isolated from the initial culture. No results were obtained also in the attempt to derive a more active variant by

Card 1/3

USSR/Microbiology. Antibiosis, and Symbiosis, Antibiotics. F-2

Abs Jour : Ref. Zhur-Biologiya, No 1, 1957, 515

Abstract : subjecting the suspension to the action of 1 . In view of the fact that 1 contains iron (11) and actinomyces are highly resistant to 11 in the nutritive medium, an attempt was made to find out whether any connection exists between the increased resistance to 11 in the medium and the increased synthesis of 1. In concentration of 0.02 to 0.08% of $FeSO_4$ this connection was not established. Further, the effect of Streptomycin (111) on the development of actinomyces in a solid medium was studied. In concentrations of 111 in the medium equal to 50, 100, and 200 gamma/ml a single

Card 2/3

USSR/Microbiology. Antibiosis, and Symbiosis, Antibiotics. F-2

Abs Jour : Ref. Zhur-Biologiya, No 1, 1957, 515

Abstract : colony has grown from 1,000, 20,000 and 40,000 spores respectively. Streptomycin resistant variants which freely develop in 150 gamma/ml varied considerably in their morphological and physiological properties. A change in the color of the mycelium was observed in 15 cases out of 200. In a small number of strains of 524 streptomycin resistant forms the formation of 1. exceeded by 150 to 200 percent the formation of 1. from the initial culture, and this index was maintained by a number of generations.

Card 3/3

USSR/Microbiology - Antibiosis and Symbiosis. Antibiotics F-2

Abs Jour : Referat Zhurn - Biol. No 16, 25 Aug 1957, 68473

Author : Trenina, G.A., Ganze, G.F., Preobrzhenskaya, V.F., Brazhinkova, M.G., Sharova, Yu.A.

Title : Antivirubin-Antiviral Antibiotic Formed by Actinomyces longispororuber.

Orig Pub : Antibiotiki, 1956, 1, No 4-9-13, 62

Abstract : The morphologic, cultural and biochemical indications are stated for the most productive strain No 8173, in relation to antivirubin (I), isolated from desert soils of Kara-Kumov. The antibiotic accumulates mainly in the actinomycete mycelium. The optimal medium for formation of I is nutrient agar, containing Chottinger broth (30 mg % amino nitrogen), 1% glucose, and 0.5% sodium chloride. The fullest isolation of I is obtained by steeping the agar nutrient medium on which the product was cultivated in strong acetone and subsequent

Card 1/2

Abs Jour : Referat Zhurn - Biol. No 16, 25 Aug 1957, 68473

evaporation under vacuum. I is obtained in the form of a dry preparation containing 800 antistaphylococcus units per mg. I appears as a bright-red pigment with properties of a dye. Blood serum only insignificantly inactivates the antibiotic. The study of the spectrum of the antibacterial action of I demonstrated that it has a selective action on staphylococci, Bacillus mycoides and hay bacilli, weakly inhibits growth of intestinal bacilli and Candida albicans. I inactivates the tobacco mosaic virus, grippe virus, smallpox virus and does not act on bacteriophage.

GAUZE, G. F.

EXCERPTA MEDICA Sec.4 Vol.11/4 Med.Microb. etc. April58

807. FORMATION OF COLIMYCIN IN CULTURES OF ACTINOMYCES FRADIAE VAR. SPIRALIS (Russian text) - Gauze G. F., Kochetkova G. V., Preobrazhenskaya T. P. and Pevzner N. S. Inst. for Res. on New Antibiotics, USSR Acad. of Med. Sci., Moscow - ANTIBIOTIKI 1956, 5 (5-8) Illus. 3

The colimycin-producing A. fradiae var. spiralis when grown on mineral agar does not colour the medium. The substrate mycelium is at first yellow, then orange or reddish-brown. On organic agar the substrate mycelium is at first yellow, then yellow-brown. An aerial mycelium appears late and is white or lilac-pink in colour. Sporangiophores are spirals, and spores are elongated. It inhibits the growth of M. aureus, B. coli, Aerobacter aerogenes, B. mycoides, B. subtilis, Candida albicans, etc. It forms two kinds of colonies: white and more active pink. Maximal colimycin formation in media in depth cultures is accompanied by autolysis of the mycelium and by an increased concentration of aminonitrogen in the nutrient medium. Addition to the medium of starch, glycerin, glucose and fumaric acid increases colimycin formation. Lactic acid depresses it.

Svinkina - Moscow (S)

GAUZE, G.F., professor (Moskva)

Study of the qualities of the new antibiotic albomycin. Vest. AMN SSSR 11 no.1:21-26 '56. (MLRA 9:5)

1. Iz Instituta po izyskaniiu novykh antibiotikov AMN SSSR.
(ANTIBIOTICS
albomycin, pharmacol.)

USSR/Virology - Bacterial Viruses (Phage). E

Abs Jour : Ref Zhur Biol., No 6, 1959, 23781

Author : Gauze, G.F., Kochetkova, G.V., Preobrazhenskaya, T,P., Kudrina, Ye. S., Sveshnikova, M.A., Popova, O.L.

Inst : -

Title : Actinophages as Test-Objects in a Search for Anti-Virus Antibiotics.

Orig Pub : Zh. gigiyeny, ipidemiol., mikrobiol. i immunol., 1957, 1, No 1, 53-58

Abstract : The ability was studied of 1000 cultures of Actinomyces, isolated from soils of various geographic locations, to suppress four cultures of bacteria and six various Actinophages, of which four were Polyphages. It was determined that about one-half of the tested Actinomyces are able to suppress one or several Actinophages in the experiment. Actinophages were suppressed by Actinomyces with antibacterial activity as well as by Actinomyces

Card 1/2

USSR/Virology - Bacterial Viruses (Phages).

Abs Jour : Ref Zhur Biol., No 6, 1959, 23781

which did not possess antibacterial activity. It was noted that Actinomyces able to suppress a combination of 4 Actinophages (No 2671, 2761, 250, and 3087) were found most frequently; these Actinophages turn out to be most convenient test-object in a selection of Actinomyces of cultures which produce antivirus antibiotics.
-- Ya.I. Rautenshteyn

Card 2/2

GAUZE, G.F.

Variability and variants of producer of albomycin. G. F. Gauze and G. V. Kochetkova. *Doklady Akad. Nauk S.S.S.R.*, 108, 1170-81(1956).—Cultures of *Actinomyces subtropicus* grown on agar in different dilns. at 28° for 72 hrs. showed that some cultures, while very active against normal staphylococci, were inactive against the so-called albomycin-resistant strains, while other cultures showed a behavior such that both strains were attacked. The latter form generated not only albomycin but another antibiotic factor which could not be isolated conventionally. Strains of intermediate characteristics were also obtained. Some of these strains could preserve their antibiotic characteristics over a period of several years. —G. M. Kosolapoff

2

1-Inst. po izucheniyu novykh antibiotikov Akademii meditsinskikh nauk SSSR. pri Ostaulino Akademikom V. N. Shaposhnikovym.

GAUZE, G.F.

[Problems in classifying actinomycete antagonists] Voprosy klassifikatsii aktinomitsetov-antagonistov. Moskva, Medgiz, 1957. 206 p.
(ACTINOMYCETALES) (MLRA 10:7)

GAUSE, G.F.; KOCHETKOVA, G.V.; PREOBRAZHENSKAYA, T.P.; KUDRINA, E.S.; SVESHNIKOVA, M.A.; POPOVA, O.L.

The use of actinophages in the search for antiviral antibiotics. J. Hyg. Epidem., Praha 1 no.1:63-69 1957.

1. Institute for Antibiotics Research of the Academy of Medical Sciences of the U.S.S.R., Moscow.
(ACTINOMYCES,
actinophages, in research on antiviral antibiotics)
(ANTIBIOTICS,
antiviral, use of actinophages in research)
(BACTERIOPHAGE,
actinophage in research on antiviral antibiotics)

GAUZE, G.F.

GAUZE, G.F.

Soviet scientists; role in solving the problem of obtaining new antibiotics. Antibiotiki 2 no.5:8-11 S-O '57. (MIRA 10:12)

1. Institut po izuskaniyu novykh antibiotikov AMN SSSR.
(ANTIBIOTICS, preparation of,
research in Russia on prod. of new prep. (Rus))

GAUZE, G.F.; PREOBRAZHENSKAYA, T.P.; KOVALENKOVA, V.K.; IL'ICHEVA, N.P.; [redacted]OVA, M.G.; LOMAKINA, N.N.; KOVSHAROVA, I.N.; SHORIN, V.A.; KUMRAT, I.A.; SHAPOVALOVA, S.P.

Crystallomycin, a new antibacterial antibiotic [with summary in English]. Antibiotiki 2 no.6:9-14 N-D '57. (MIRA 11:2)

1. Institut po izyskaniyu novykh antibiotikov AMN SSSR.
(ANTIBIOTICS, preparation of,
crystallomycin, prod. from Actinomyces violaceoniger (Rus))
(ACTINOMYCES
violaceoniger, prod. of antibiotic crystallomycin (Rus))

USSR / Microbiology. Antibiosis and Symbiosis. F
Antibiotics.

Abs Jour : Ref Zhur - Biologiya, No 5, 1959, No. 19478

Author : Brazhnikova, M. G.; Kovsharova, I. N.; Gauze, G. F.; Sveshnikova, M. A.; Bobkova, T. C.; Shorin, V. A.; Rossolimo, O. K.

Inst : Not given

Title : Cerulomycin, a Recent Antivirus Antibiotic, Formed by Actinomyces coerulescens

Orig Pub : Antibiotiki, 1957, 2, No 6, 16-20

Abstract : A. coerulescens 1581, which produces the antivirus antibiotic cerulomycin (I), is cultured in flasks on swings in a medium, containing 1% soybean flour or corn extract, 1% glucose, 0.5% NaCl and 0.5% $CaCO_3$. The

Card 1/3

Inst. Search for New Antibiotics
AMS USSR

USSR / Microbiology. Antibiosis and Symbiosis. F
Antibiotics.

Abs Jour : Ref Zhur - Biologiya, No 5, 1959, No. 19478

of 200 mg/kg. I possesses weak neutralizing action on grippe virus in vitro and has little medicinal value in experimental grippe infection. -- T. P. Vertogradova

Card 3/3

USSR/Virology - Bacterial Viruses (Phages) E.

Abs Jour : Ref Zhur - Biol., No 19, 1958, 85765

Author : Gauze, G.F., Kochetkova, G.V., Preobrazhenskaya, T.P., Kudrina, Ye.S., Sveshnikova, M.A., Popova, O.L.

Inst : - Institut po izyskaniyu antibiotikov

Title : Studies of the Suppressive Effects of Actinomycetes on Actinophages.

Orig Pub : Mikrobiologiya, 1957, 26, No 6, 729-735

Abstract : Of 9 actinophages isolated from the soil only 2 were distinguished by specificity of action, while the others were polyvalent. Comparative studies of the antiphage and actibacterial activity of 1000 strains of Actinomycetes showed that of 546 strains which suppressed bacterial growth, 331 also suppressed actinophages (under conditions of interaction with a culture), and of 454 strains which did not suppress bacteria, 247 also suppressed actinophages. Of 578 cultures of Actinomucetes with

Card 1/2

- 3 -

USSR/Virology - Bacterial Viruses (Phages) E.

Abs Jour : Ref Zhur - Biol., No 19, 1958, 85765

antiphage activity, 279 (48%) acted against 1, 147 (21%) acted against 2, 85 (15%) acted against 3, 40 (7%) acted against 4, 21 (4%) acted against 5, and 6 (1.9%) acted against 6 different phages. -- Ya.I. Rautenshteyn

Card 2/2

USSR/Microbiology - Antibiosis and Symbiosis F-2
Antiobiotics.

Abs Jour: Ref Zhur - Biol, No 18, 1958, 81441

Author : Gauze, G.F.

Inst : -

Title : Geographic Distribution of Microorganism-Antagonists.

Orig Pub: Uzpekhi sovrem. biologii, 1957, 43, No. 1, 46-54

Abstract: The author invites the attention of investigators to a very important question from the point of view of seeking antibiotics, but one to which little attention is paid: the geographic distribution of antagonists (mold fungi, bacteria, and actinomycetes) and makes some general deductions. Bibl. 14 refs.

Card 1/1

GAUZE, G.F., professor (Moscow).

European conference on antibiotics. Priroda 46 no.1:111-112 Ja '57.
(Milan--Antibiotics--Congresses)

GAUZE, G.F., professor.

Effect of antibiotics on viruses. Priroda 46 no.3:98-100 Mr '57. (MLRA 10:3)

1. Institut po izyskaniyu novykh antibiotikov Akademii meditsinskikh nauk SSSR (Moskva)
(Antibiotics) (Viruses)

USSR/Microbiology - General Microbiology. Variability and Heredity F

Abs Jour : Ref Zhur Biol., No 22, 1958, 99290

Author : Gauze, G.F., Kochtkova, G.V., Vladimirova, G.B.

Inst : AS USSR

Title : On Biochemical Mutants in Yeast Cells with Impaired Oxication.

Orig Pub : Dokl. AN SSSR, 1957, 117, No 1, 138-141

Abstract : Through the action of trypaflavine (3,6-diamino-10-methylacridine chloride), camphor or ultraviolet rays on the plicated form of Saccharomyces cerevisiae, Rostov breed, strain AN-2, biochemical mutants with impaired respiration were obtained. This property is firmly transmitted to future generations and is retained with reseedings in the course of many months. The impairment

Card 1/2

USSR/Microbiology - General Microbiology - Variability and Heredity F

Abs Jour : Ref Zhur Biol., No 22, 1958, 99290

of respiration is accompanied by irregular changes of aerobic glycolysis: in certain cases the intensity of glycolysis increases and in others it decreases. For rapid differentiation between normal cells and mutants with impaired respiration the method of specific staining of colonies on wort-agar, with the help of the leukobase of methylene blue, was used. Biochemical mutants of yeast cells differ from normal cells in the same way as human and animal cancer cells differ from the healthy cells of an organism. The mutants obtained can therefore be used as test objects in investigations on anticancer antibiotics. -- L.G. Azova

Card 2/2

Country : USSR
Category : Microbiology. Antibiosis and Symbiosis. Antibiotics

Abs. Jour : Ref Zhur-Biol., No 23, 1958, No 103696

Author : Gauze, G. F.; Kochetkova, G. V., Vladimirova, G. B.
Institut. : Academy of Sciences USSR
Title : Biochemical Mutants of Staphylococci with Damaged Oxidation Systems as Test-Objects in the Search for Cancer Antibiotics.
Orig Pub. : Dokl. AN SSSR, 1957, 117, No 4, 720-722.

Abstract : Through ultra-violet irradiation of a strain of Staphylococcus aureus three mutants were obtained which differed from the original in their slow growth, intense pigmentation and considerable reduction in respiration (40-60 percent compared with the normal). Such mutants are similar to cancer cells, in which impairment of oxidation is also found. It has been shown that penicillin and streptomycin suppress the growth of the original strains and mutants, whereas aibomycin, which depresses the growth of bacteria only in the presence of oxygen, acts on the original strain and does not check the growth of mutants. In consideration of the similarity

Card: 1/2

Country :
Category : F

Abs. Jour :Ref Zhur-Biol., No 23, 1958, No 103596

Author :
Institut. :
Title :

Orig Pub: :

Abstract (Cont.) :between the mutents and cancer cells from the point of view of impairment of oxidation, the authors attempted to find antibiotics which would act selectively on cells with impairment of oxidation and would not act on cells with normal respiratory apparatuses. Among 2500 cultures of actinomycetes freshly isolated from soil, 60 cultures were found which possessed a selective effect on the staphylococcus mutants with impairment of oxidation.--G. P. Kalina.

Card: 2/2

GAUZE, Georgiy Frantsevich; MISHUSTIN, Ye.N., otv.red.; AVTONYUK, L.D., red.izd-va; NOVICHKOVA, N.D., tekhn.red.

[Ways of searching for new antibiotics] Puti izyskaniia novykh antibiotikov. Moskva, Izd-vo Akad. nauk SSSR, 1958. 171 p. (MIRA 12:1)

1. Chlen-korrespondent AN SSSR (for Mishustin).
(ANTIBIOTICS)

GAUZE, Georgiy Frantsevich; SHORIN, V.A., red.; ZAKHAROVA, A.I., tekhn.red.

[Lectures about antibiotics] Lektsii po antibiotikam. Izd.3, dop. Moskva, Gos.izd-vo med.lit-ry, 1958. 354 p. (MIRA 13:4)

(ANTIBIOTICS)

GAUZE, G. F. Moscow, USSR.

"Some Biochemical Foundations in the Search for Anticancer Antibiotics."

Report submitted for IV Intl. Cong. of Biochemistry, Vienna, 1 - 6 Sep 1958.

USSR/General Problems of Pathology - Experimental Therapy U-1

Abs Jour : Ref Zhur - Biol., No. 18, 1958, 84877

Author : Gauze, G. F.
Inst : Academy of Medical Sciences USSR
Title : Certain Theoretical Problems in the Search for Anti-Cancer Antibiotics

Orig Pub : Vestn. Akad. med. nauk SSSR, 1958, No. 1, 37-41

Abstract : Starting with the supposition that the metabolism of cancer cells is characterized by heriditary disturbances of the respiratory apparatus /i.e. of the cells/, studies were made of the possibility of utilizing as a test-object for the selection of anti-cancer antibiotics mutant strains of fungi and staphylococci with attenuated oxidative processes. Following the action on cultures of Saccharomyces cerevisiae of trypaflavin, camphor, or ultraviolet radiation, or the action of ultraviolet radiation on Staphylococcus aureus cultures, a number of strains were obtained

Card 1/3

Abs Jour : Ref Zhur-Biol., No. 18, 1958, 84877

Abstract : with inheritable disturbances of the respiratory processes. The mutants did not oxidize leukobase to methylene blue. These mutant strains were used (G.F. Gauze, G. F. Kochetkov, G. B. Vladimirova, 1957) for the study of the properties of 2500 cultures of various actinomycetes isolated from the soil. The cultures, seeded on agar, were transferred in two days to suspensions of microorganisms of normal respiratory functions or with disruptions of same. It was found (T.P. Preobrazhenskaya, Ye. S, Kudrina) that 53 cultures suppressed the growth of the mutants with altered respiratory functions but did not influence the other microorganisms. The larger part of the cultures which were active in relationship to the mutant staphylococci showed no effect on the mutant fungi; of these, ten cultures in experiments in vitro suppressed the ascitic cells of the Ehrlich carcinoma. A certain portion, however, of the

GAUZE, G.F., KUDRINA, Ye.S., TRENINA, G.A., TOROPOVA, Ye.G., VYSHEPAN, Ye.D.

Formation of a new antibiotic actinoidin in cultures of Proactinomyces actinoides [with summary in English]. Antibiotiki 3 no.1:51-55 Ja-F'58 (MIRA 11:5)

1. Institut po izyskaniyu novykh antibiotikov AMN SSSR.
(ANTIBIOTICS,
actinoidin, prod. by Poractinomyces actinoides (Rus))
(NOCARDIA,
Proactinomyces actinoides, prod. of actinoidin (Rus))

BRAZHNIKOVA, M.G.; USPENSKAYA, T.A.; SOKOLOVA, L.B.; PREOBRAZHENSKAYA, T.P.; GAUZE, G.F.; UKHOLINA, R.S.; SHORIN, V.A.; ROSSOLIMO, O.K.; VERTOGRADOVA, T.P.

New antiviral antibiotic heliomycin. Antibiotiki 3 no.2:29-34 Mr-Ap '58. (MIRA 12:11)

1. Institut po izyskaniyu novykh antibiotikov AMN SSSR.
(ANTIBIOTICS,
heliomycin, prep. from Actinomyces flavochromogenes var. heliomycini & antiviral properties (Rus))
(ACTINOMYCES, metabolism,
flavochromogenes var. heliomycini, heliomycin synthesis (Rus))

GAUZE, G.F.

Symposium on the biochemistry of antibiotics at the Fourth International Congress of Biochemistry. Antibiotiki 3 no.6: 117-119 N-D '58. (MIRA 12:2)

(ANTIBIOTICS)

GAUZE, G.F., IVANITSKAYA, L.P., VLADIMIROVA, G.B.

Biochemical mutants of some bacteria with impaired oxidation [with summary in English]. Izv.An SSSR. Ser.biol. no.6:719-725 N-D '58 (MIRA 11:11)

1. Institut po izyskaniyu antibiotikov Akademii meditsinskikh nauk SSSR, Moskva.
(ESCHERICHIA COLI)
(OXIDATION, PHYSIOLOGICAL)
(BACILLUS MYCOIDES)

Gauze, G. F.

GAUZE, G.F., prof.

Some theoretical problems in finding anticancer antibiotics. Vest. AMN SSSR 13 no.1:37-41 '58. (MIRA 11:2)

1. Institut po iskaniyu novykh antibiotikov AMN SSSR, Moskva.
(ANTIBIOTICS
anti-cancer, theoretical study)
(CYTOTOXIC DRUGS,
antibiotics (Rus))

AUTHORS: Gauze, G. F., Ivanitskaya, L. P., Vladimirova, G. B. 20-1-53/58

TITLE: On the Cytochromic System of Biochemical Mutants of Bacterium coli and Staphylococci With Disturbed Oxidation (O tsitokhromnoy sisteme biokhimicheskikh mutantov kishechnoy palochki i stafilokokkov s povrezhdennym okisleniyem).

PERIODICAL: Doklady AN SSSR, 1958, Vol. 118, Nr 1, pp. 189-191 (USSR)

ABSTRACT: Such mutants of microorganisms may be considered microbiological equivalents of cancer-cells and may serve as test-objects in the determination of cancer-inhibiting antibiotics. The authors wanted to produce mutants of Bact.coli with a hereditary disturbance of the respiratory apparatus. Slowly growing mutants were obtained by ultraviolet radiation of the strains 5383 and 5375 with a dose which almost killed all bacteria. Other analogous mutants were produced by the influence of urethane upon Bact. paracoli. This substance is highly cancerogenic toward the cells of higher organisms and easily causes cancer of the lung (reference 1). In individual rare cases mutant forms developed which after further re-inoculations hereditarily conserved a retarded growth and a disturbed oxidation. Table 1 shows that the Bact.coli-

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mutants had only 45 and 35% of the respiratory activity of the initial culture. The activity of the urethane-mutant of Bact. paracoli amounted to 28%. Table 2 shows that the respiration in these mutants is less suppressed by cyanides than in normal bacteria, as it was proved by the authors (reference 3) for Staphylococcus aureus. This give rise to the assumption of a disturbance of the cytochromic system in the mutants. The cytochromes were therefore investigated with the microspectroscope by Zeiss (Tseiss). As figure 1 shows, the initial strain of staphylococci (reference 4) has 3 characteristic absorption bands in the spectrum. In biochemical mutants the wide band of the b_1 cytochrome can no longer be determined. In the mutant of Bact. paracoli the damage of the cytochromic system is of another nature. In the initial culture exists a wide cytochrome-b_1-band and 2 narrow ones (a and a_2, figure 1). The biochemical mutant instead of the b_1-band shows 2 distinct cytochrome-bands at 555 and 565 mμ. Besides a wide cytochrome-band is here seen at 600 mμ and the weak a_2-band hitherto seen. The two bands instead of the b_1-

band are theoretically interesting, as the opinion was uttered (reference 5) that the b_1-band developed of the fused b- and c-bands. The biochemical mutants of the staphylococci and of Bact. paracoliin a number of cases show quite a similar behavior. Thus the authors determined antibiotics which selectively suppress all these mutants and which influence the initial forms of the microorganisms. Some of these antibiotics also suppress the growth of the cells of the acytic cancer in mice. Defects of the cytochromic system are also characteristicof the cancer-cells. They are different in different tumors. In man it was a small content of cytochrome c (reference 6). In mice cytochrome b was almost completely absent, whereas c was relatively even present in excess. In this are to be seen analogies with the above-described mutants of the microorganisms with disturbed respiration.
There are 1 figure, 2 tables, and 7 references, 1 of which is Slavic.

On the Cytochromic System of Biochemical Mutants of 20-1-53/58
Bacterium coli and Staphylocci With Disturbed Oxidation

ASSOCIATION: New Antibiotics Research Institute, Academy of Medical Sciences USSR (Institut po izyskaniyu novykh antibiotikov Akademii meditsinskikh nauk SSSR).

PRESENTED: October 30, 1957, by A. L. Kursanov, Academician

SUBMITTED: October 29, 1957

AVAILABLE: Library of Congress

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GAUZE, G. F. (DR.)

Antibiotic Anti-Mitotics in the USSR - Dr. G. F. Gauze, Academy of Sciences, USSR

Report to be submitted for the First Intl Symposium of Anti-Infective and Anti-Mitotic Chemotherapy, Geneva, Switzerland, 12-13 Sep 59.

GAUZE, G. F.

"Darwinism, Microbiology, and Cancer."
Report Submitted at the Darwin Centennial Celebration, Chicago,Ill., 24-28 Nov 59.

Academy of Medical Sciences, Moscow.

GAUZE, G.F.; MAKSIMOVA, T.S.; POPOVA, O.L.; BRAZHNIKOVA, M.G.; USPENSKAYA, T.A.; ROSSOLIMO, O.K.

Mutomycin, a new antibiotic produced by Actinomyces atroolivaceus. Antibiotiki 4 no.3:20-23 My-Je '59. (MIRA 12:9)

1. Institut po izyskaniyu novykh antibiotikov AMN SSSR.
(ANTIBIOTICS,
mutomycin, prod. by Actinomyces atroolivaceus & pharmacol. (Rus))

GAUZE, G.F., prof.

Darwinism and certain aspects of the investigation of cancer cell analogues in microorganisms. Vest. AMN SSSR 14 no.2:49-58 '59. (MIRA 12:4)

1. Institut po izyskaniyu novykh antibiotikov AMN SSSR, Moskva.
(NEOPLASMS,
cancer cell analogues in microorganisms, genetic aspects (Rus))
(MICROORGANISMS,
same)
(GENETICS,
Darwinism in interpretation of cancer cell analogues in microorganisms (Rus))