BANDZAYTIS, V.V. [Bendzaitis, V.V.]

Results of cycloserine treatment of pulmonary tuberculosis. Probl. tub. no.8:104-105'62. (MIRA 16:9)

1. Iz Romaynskoy tuberkuleznoy bol'nitsy (glavnyy vrach K.K. Kavalyauskas, nauchnyy rukovoditel' raboty - kand.med. nauk Yu.L.Gamperis), Litovskaya SSR.
(TUBERCULOSIS) (ISOXAZOLIDINONE)

BANDZELADZE, A.Ye.; SHCHUKIN, A.I.

PVUK-1 electronic moisture gauge for coal. Ugol' 36 no.9:34-35
S '61. (MIRA 14:9)
(Coal--Testing) (Gauges moisture--Measurement)

BANDZO, G.

General measures for improving pastures in Macedonia. p. 14

POLJOPRIVREDA, Beograd, Vol 4, No. 2, Feb., 1956

SO: East European AccessionsList, Vol 5, No. 10, Oct., 1956

RAKIJAS, BANDZOVIC

BANDZOVIC-RAKIJAS, O.

6

YUGO:

Syntheses in the diphenyl ether series. II. Prepn. of 8-phenoxyquinoline and of 8-phenoxy-1,2,3,4-tetrahydroquinoline. V. Hahn, J. Bistan, and O. Bandžović-Rakijaš (Univ. Zagreb, Yugoslavia). *Arhiv Kem.* [illegible] (1955) (English summary); cf. *C.A.* 49, 2348*i*.—A tech. mixt. of *o*- and *p*-$ClC_6H_4NO_2$ (ratio 70:30) was converted to the corresponding diphenyl ethers [*Org. Syntheses*, Collective Vol. II, 445(1943)(*C.A.* 28, 1594[9])] reduced by Suter's method (*C.A.* 23, 4480) to a mixt. of the corresponding aminodiphenyl ethers, b_{11} 180-90°, in 75% yield, which were separated to the individual ethers by Suter's method (*loc. cit.*). Thus from 30 g. of the mixt. were obtained 25 g. (69%) of the pure *o*-aminodiphenyl ether (I), m. 42-4°. A modified Skraup synthesis with 0.05 mole I, 0.2 mole of glycerol, 0.0375 mole As_2O_5 and 10.12 g. concd. H_2SO_4 gave 71% crude 8-phenoxyquinoline (II) purified by vacuum distillation, b_{11} 218-22°, m. 105.5-6.5°. II.HCl crystallizes from EtOH-Et_2O as the monohydrate, colorless prisms, m. 102-4°. Remelting 169-70° [anhyd. II.HCl (III)], dehydration *in vacuo* over P_2O_5, gave III, m. 170-1°; picrate, yellow needles, m. 140.5-1.5° (from EtOH); picrolonate, yellow needles, m. 175-5.5° (decompn.) (from EtOH-dioxane). To 0.032 mole II in 100 ml. hot abs. EtOH was added 0.652 g.-atom Na over one hour, 100 ml. more EtOH was added to dissolve all the Na; H_2O and HCl were added and the mixt. evapd. to dryness, then extd. with H_2O and Et_2O to give 67% the 8-phenoxy-1,2,3,4-tetrahydroquinoline (IV), colorless oil, b_{11} 205-10°, m. 79-80°. Upon recryst. it m. 81-2° (from EtOH); HCl salt, colorless plates, m. [illegible] (from EtOH-Et_2O); picrolonate, [illegible] plates, m. [illegible] (decompn.) (from EtOH). [illegible]

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S/044/62/000/005/016/072
C111/C333

AUTHOR: Banea, Horia

TITLE: On the behavior of the solutions of differential equations with a small parameter at the derivatives

PERIODICAL: Referativnyy zhurnal, Matematika, no. 5, 1962, 54, abstract 5B249. ("Studii şi cercetări mat. Acad. RPR", 1961, 12, no. 1, 251-273)

TEXT: The following theorems are proven:

1.) If $F(x_1,\ldots,x_n, 0, t) \equiv 0$, $\frac{\partial F(x_1,\ldots,x_n,0,t)}{\partial y} < -k^2$ for $|x_i| \leq a$, $t \geqslant 0$, and if the solution $x_i = 0$ of the system $\frac{dx_i}{dt} = f_i(x_1,\ldots,x_n,0,t)$ is uniformly asymptotically stable, then the zero solution of the system

$$\frac{dx_i}{dt} = f_i(x_1,\ldots,x_n, y, t)$$

$$\mu \frac{dy}{dt} = F(x_1,\ldots, x_n, y, t)$$

Card 1/2

On the behavior of the solutions of ...

is uniformly asymptotically stable for sufficiently small $\mu > 0$.

2.) The system

$$\frac{dx}{dt} = f(x,y), \quad \mu \frac{dy}{dt} = F(x,y) \qquad (1)$$

is considered. If there exists such a function $\varphi(x)$ defined for $|x| \leq a$ that $\varphi(0) = 0$, $\left.\frac{\partial F}{\partial y}\right|_{y=\varphi(x)} \leq -k^2$, and if further the solution $x=0$ of the equation $\frac{dx}{dt} = f(x,\varphi(x))$ is asymptotically stable, then the zero solution of system (1) is also asymptotically stable for sufficiently small $\mu > 0$.

Various generalizations of the first theorem are given. It is pointed out that in the second theorem μ may depend on t; the equation $\mu(t)\, y'' + y' + y = 0$ suggested by Bellman is examined. Other applications are also mentioned.

In the second part of the paper the author considers systems with constant coefficients.

[Abstracter's note: Complete translation.]

Card 2/2

BANECKA, Z.

The most important achievements of the Gorzow Synthetic Fibers Works in the field of introducing technological progress in 1961. Przem chem 41 no.7:405 Jl '62.

POLAND/Chemical Technology. Chemical Products and Their Uses. Part III. Food Industry. H

Abs Jour : Ref Zhur-Khimiya, No 15, 1958, 51825

Author : Banecki, Henryk
Inst : -
Title : Bread Baking from Flour of Intergrown Grains.

Orig Pub : Przegl. piekarn. i cukiern., 1957, 5, No 12, 10-11

Abstract : The following recommendations were made: (1) A decrease in the amount of flour used for leavening in relation to the total amount of flour for the dough; (2) Slow dough leavening at lower temperatures, and for rye flour an increase in the amount

Card : 1/2

POLAND/Chemical Technology. Chemical Products and Their Uses. Part III. Food Industry. H

Abs Jour : Ref Zhur-Khimiya, No 15, 1958, 51825

of yeast which is added to the dough.
-- Z. Fabinskiy

Card : 2/2

BANEK, T. S.

BANEK, T. S.: "Problems of designing equipment for loading operations at stations." Min Railways USSR. Leningrad Order of Lenin Inst of Railroad Transport Engineers imeni Academician V. N. Obraztsov. Leningrad, 1956.
(Dissertation for the Degree of Candidate in Technical Sciences).

SO: Knizhaya Letopis', No 23, 1956

PRAVDIN, Nikolay Vladimirovich, kand. tekhn. nauk, dots.;
BANEK, Tamara Semenovna, kand. tekhn. nauk, dots.;
TSIKUNOV, Anton Yefimovich, kand. tekhn. nauk, dots.;
YARMOLENKO, Vasiliy Yefimovich, kand. tekhn. nauk,
dots.; SAVCHENKO, I.Ye., kand. tekhn. nauk, red.

[Passenger stations and coach yards] Passazhirskie i
tekhnicheskie stantsii. Moskva, Transport, 1965. 223 p.
(MIRA 18:7)

BANER, O. N.

Sanitarno-ozdorovitel'nye meropriiatiia v prudovykh khoziaistvakh pri parazitarnykh zabblevaniiakh ryb. [Sanitary measures for ponds in the control of parasitic diseases of fish]. Moskva, Pishchepromizdat, 1953. 34 p.

SO: Monthly List of Russian Accessions, Vol. 6 No. 11 February 1954

MUSIAL, Michal, mgr ins.; BANERT, Antoni

Application and utilization of cast-iron rollers. Wiad hut 16 no.7/8:225-231 Jl-Ag '60.

CONSTANTINESCU, S.; TEODORESCU, B.; SANIELEVICI-MARINOV, S.; CUNESCU, V.; IACOB, A.; SCHMITZER, G.; VULCANESCU, M.; MARINOV, M.; VASILESCU, C.; LICHTENBERG, R.; BARCAN, F.; BANESCU, E.; BERNSTEIN, D.

Mass clinical and radiological detection (by radiophotography) of carditis in school-age children. Probl. reumat., Bucur. no.5:79-82 1958.
(RHEUMATIC HEART DISEASE, prevention & control
in school-aged child. in Rumania, clin. & radiol. diag.)

HERLING, C. (Bucuresti); UDRISTE, Constantin; PAEDESCU Stefan (Slatina); Pirsan, Liviu (Bucuresti); BERDAN, C.; IONESCU-TIU, C.; IONESCU, Florica H. (Bucuresti); FILIPOIU, Al. (Buzau); GEORGESCU, George (Bucuresti); SANDULACHE, C., prof. (Negresti, Iasi); MORTUN, E.; SCHEFFEL, Gabriela (Cimpulung); TEODORESCU, I. prof. (Galati); SICLOVAN, I. (Petrosani); ACU, Dumitru (Cluj); GRECU, Eftimie (Bucuresti); PAUN, N., prof. (Rimnicu Vilcea); GHEORGHIU, Adrian (Bucuresti); DUMITREASA, P., prof. (Cluj); GEORGESCU, Corneliu (Craiova); BOBANCU, V. (Bucuresti); BANESCU, Grigore, prof. (Cimpina); OPREA, Gh. (Filiasi); POPESCU, Ioan M. Bucuresti); Serb, Ion (Lugoj)

Proposed problems. Gaz mat B 16 no.4:172-177 Ap '65.

BANESCU, Veronica

Contributions to the study of the Muntii Buzaului mycoflora.
Studii cerc biol veget 15 no.2:175-202 '63.

1. Laboratorul de fitopatologie, Facultatea de stiinte naturale, Bucuresti. Comunicare prezentata de academician Alice Savulescu.

BANESCU, Veronica

New micromycetes for Rumanian flora. Studii cerc biol veget 15 no.2:203-213 '63.

1. Universitatea din Bucuresti, Facultatea de stiinte naturale, Laboratorul de fitopatologie. Communicare presentata de academician Alice Savulescu.

BAJER, Ladislav
SURNAME, Given Names

Country: Czechoslovakia

Academic Degrees: Graduated Historian (promovany historik)

Affiliation: Archeological Institute SAV /Slovenska akademia vied; Slovak Academy of Sciences/ (Archeologicky ustav SAV), Nitra.

Source: Bratislava, Nasa Veda, Vol VIII, No 5, 1961, pages 306-310.

Data: "The Oldest Settlements in Slovakia."

GPO 981643

BANETISHVILI, A. Z.: Master Tech Sci (diss) -- "Geodetic work on the construction of tunnels (Under the conditions of the first tunnel of the Khram GES-2)". Tbilisi, 1957. 21 pp (Order of Labor Red Banner Georgian Agric Inst), 100 copies (KL, No 8, 1959, 136)

BANETISHVILI, A.Z.

Traversing in tunnel construction. Soob.AN Gruz.SSR 21 no.5: 555-559 N '58. (MIRA 12:5)

1. Ordena Lenina trest "Gruzgidroenergostroy." Predstavleno akademikom R.I.Agladze.
(Traverses (Surveying)) (Tunnels)

BANETISHVILI, A.Z.

Effect of theodolite centering and signals on angle measurement. Soob.AN Gruz.SSR 23 no.1:61-66 Jl '59.
(MIRA 13:1)

1. Ordena Lenina trest "Gruzgidroenergostroy," Tbilisi. Predstvaleno akademikom R.I.Agladze.
(Mine surveying)

BANETISHVILI, A.Z.

Preliminary calculation of headings from opposite ends in hydraulic engineering tunnels. Soob.AN Gruz.SSR 23 no.3: 297-304 S '59. (MIRA 13:3)

1. Ordena Lenina trest "Gruzgidroenergostroy," Tbilisi. Predstavleno akademikom K.S.Zavriyevym.
(Tunneling)

S/035/62/000/006/063/064
A001/A101

AUTHOR: Banetishvili, A. Z.

TITLE: Accumulation of errors and adjustment operations of polygon measurements in scalar, vector and tensor quantities

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 6, 1962, 36, abstract 60222 ("Soobshch. AN GruzSSR", 1961, v. 26, no. 3, 297 - 304)

TEXT: A mean square error m_β (not necessarily a constant one) in measuring an angle at point i of a traverse results in a mean square displacement of point i + 1 relative to point i by (vector) $(l_i/\rho'')\overline{m_\beta}$. It is proposed to determine components of these vectors along axes x and y and components $M_{x\beta}$ and $M_{y\beta}$ of displacements of points i relative to the initial point as a sum of individual components. Similar recommendations are given for mean square displacements of points caused by mean square errors m_l in measurements of the sides. The total mean square displacement of any point relative to the initial point should be determined by the formulae:

Card 1/2

Accumulation of errors and...

$$M_x^2 = M_{x_0}^2 + M_{x1}^2; \quad M_y^2 = M_{y_0}^2 + M_{y1}^2.$$

It is proposed to distribute misclosures of a free closed traverse proportional to M_x and M_y.

N. Drozdov

[Abstracter's note: Complete translation]

Card 2/2

BANETISHVILI, A.Z.

Errors of traversing steps and their vector analysis. Soob. AN Gruz. SSR 37 no.3:635-642 Mr '65. (MIRA 18:5)

1. Submitted October 2, 1964.

BANETISHVILI, A.Z.

Accumulation of errors and comparative operations of polygonometry in scalar, vector, and tensor magnitudes. Soob.AN Gruz.SSR 26 no.3: 297-304 Mr '61. (MIRA 14:4)

1. Upravleniye stroitel'stva Khramskoy gidroelektricheskoy stantsii No. 2. Predstavleno akademikom K.S.Zavriyevym.
(Polygons)

L 55045-65 EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4 WW/RM

ACCESSION NR: AP5011994 UR/0374/65/000/001/0117/0123
678:5

AUTHORS: [illegible]

TITLE: Stat[illegible] of thermally stabilized polyamide [illegible]

SOURCE: Mekhanika polimerov, no. 1, 1965, 117-123

TOPIC TAGS: polyamide, thermal stabilization, orientation, static stress/ P 54.6 resin

ABSTRACT: The changes in static strength of thermally stabilized polymers with preliminary orientation were studied under interrupted and [illegible] The [illegible] and thermal stabilization [illegible] of polyamide [illegible] was investigated. A mixture of polyamide [illegible] experimental prisms [illegible] with [illegible] example, the velocity of the [illegible]

Card 1/3

L 55045-65
ACCESSION NR: AP5011994

meters/min and the temperature of the surrounding medium was 291K. The relative deformation was ε = 250%, the decrease in cross section was 32%, and the increase in length was 350%. The cross section of the oriented sample along the whole length of the latter had a rectangular shape. All samples were exposed to a temperature of 423 ± 1K. The heating of some samples was intermittent with a period of 144 hours. During this period the samples were annealed at 291K and a relative humidity of 45% to 50%. Baking with intermittent annealing of preliminarily oriented thermostabilized P-548 resin increases the initial tensile [illegible] the resin (see [illegible] the enclosure). Nonstabilized sample [illegible] preliminarily [illegible] brittle failure after [illegible] respectively. The surface of stabilized samples after baking for 576 hours remained perfectly smooth. The surface of nonstabilized samples [illegible] the depth of [illegible] increases with length of baking period. [illegible] photograph.

ASSOCIATION: none

SUBMITTED: 20May64 ENCL: 01 SUB CODE: OC, TD

NO REF SOV: 004 OTHER: 001

Card 2/3

L 35045-65
ACCESSION NR: AP5011994

ENCLOSURE: 01

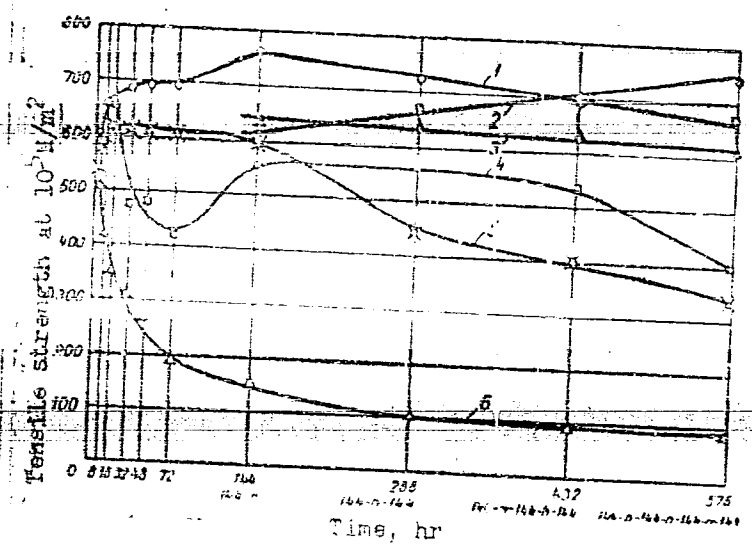

Fig. 1. The dependence of the tensile strength during stretching of resin P-[illegible] on the period of baking at 423K. Stabilized resins: 1- with preliminary orientation; 2- with preliminary orientation and annealing; 5- without preliminary orientation and annealing. Nonstabilized resins: 3- with preliminary orientation and annealing; 4- with preliminary orientation and no annealing; 6- without preliminary orientation and annealing. η- annealing period [illegible] hours.

Card 3/3

BANFAY I., KUBIK I. and SOMOGYI E.

Anat. Inst. med. Univ., Budapest. *Neuere Beiträge zur Neuroregulation des Leberkreislaufs. Recent data on neuro-regulation of the hepatic circulation ACTA PHYSIOL. ACAD. SCIENT. HUNG. (Budapest) 1954, 5/suppl. (60)

SO: EXERPTA MEDICA, Section II Vol. 7 No1 11

BANFAI, Ivan, dr.

Primary congenital ectasia of vena jugularis interna. Orv. hetil. 97 no.30:837-838 22 July 56.

1. A Pestmegyei Tanacs Korhaza (igaz.-foorvos: Szemantsik, Jeno dr.) Orr-gege Osztalyanak (foorvos: Rethi, Aurel dr., az orvostud. koktora) kozl.

(VEINS, JUGULAR, abnorm.
primary ectasia of interna in inf. (Hun))
(ABNORMALITIES
primary ectasia of vena jugularis interna in inf. (Hun))

BANFAI, Ivan

A case of amidazophen hypersensitivity. Ful orr gegegyogy. no.3:143-144 Oct 57.

1. A Pestmegyei Tancs (Semmelweis) korhaza Orr-torok-gege osztalyanak (foorvos: rethi Aurel) kozlemenye.

(AMINOPYRINE, inj. eff.
allergic shock (Hun))
(ALLERGY,
to aminopyrine, severe reaction (Hun))

BANFAI, Ivan, Dr.

After-treatment of patients operated for dilatation of the glottis on our ward. Ful orr gegegyogy 4 no.2:77-84 June 58.

1. A Pestmegyei Tanacs (Semmelweis) Korhaza Orr-torok-gegebronchologiai osztalyanak (foorvos: Rethi Aurel dr.) kozlemenye.
(LARYNX, surg.
dilatation of glottis, postop. ther. (Hun))

BANFAI, Ivan, dr.

Surgical treatment of tracheal malacia with stenosis in goiter. Ful-orr-gegegyogy 6 no.4:147-150 D '60.

1. A Pestmegyei Semmelweis (Rokus) Korhaz (Budapest) Orr-torok-gege-broncho-logiai osztalyanak (foorvos: Rethi Aurel dr.) kozlemenye.

(GOITER compl)
(TRACHEA dis)

BANFAI, Ivan, dr.

Problems of conservative surgery in laryngeal cancer. Ful-orr-gegegyogy 7 no.3:130-144 S '61.

1. Pestmegyei Tanacs Semmelweis (Rokus) Korhaza Orr-torok-gege-bronchologiai osztalyanak (Budapest) (Foorvos: Rethi Aurel dr.) kozlemenye.

(LARYNX neoplasms)

BANFAI, Ivan, dr.

Complications following tracheotomy with special reference to decannulization difficulties. Orv. hetil. 103 no.34:1599-1603 26 Ag '62.

1. Pest Megyei Tanacs Korhaza, Orr-Torok-Gege-Bronchologiai Osztaly.
(TRACHEA surg)

BANFAI, Ivan, dr.

Problems of conservative surgery of laryngeal carcinoma.
Fulorrgegegyogyaszat. 8 no.2:55-68 Je '62.

1. Pestmegyei Tanacs Semmelweis Korhaza Orr-Torok-Gege-Bronchologiai Osztalyanak (Foorvos: Rethi Aurel dr.) kozlemenye.
(LARYNX neopl)

BANFAI, Ivan, dr.

Horizontal resection resulting in the anatomical reconstruction of the larynx. Fulorrgegegyogyaszat 8 no.4:164-171 D '62.

1. A Pestmegyei Tanacs Semmelweis (Rokus) Korhaza (Budapest) Orr-, torok-, gege-, bronchologiai osztalyanak (Foorvos: Rethi Aurel dr.) kozlemenye.

(LARYNGEAL NEOPLASMS) (LARYNGECTOMY)

HUNGARY

ZANFAL, Dr Ivan; BRASCH, Dr Zoltan; and SIMON, Dr Janos; Semmelweis Hospital (Semmelweis Korhaz) of the Council of Pest Megye (Pest Megyei Tanacs).

"Evaluation of Metastases of the Cervical Lymph Nodes on the Basis of our Throat-Cancer Cases"

Budapest, Magyar Onkologia, Vol 10, No 4, Dec 1966; pp 205-207.

Abstract: The Lymph nodes removed during block dissection were subjected to detailed histological examination. The processing of a single block dissection required 400-600 sections, and this could be carried out only in a few cases. It was found that 31% of the lymph nodes considered clinically negative contained microscopic metastases. No references.

1/1

BANFI, Denes (Budapest, XIV., Telepes u. 42); TEPLAN, Istvan (Budapest, XII., Kekgolyo u. 5); OTVOS, Laszlo (Budapest, II., Pusztaszeri ut 57/69)

Preparation of phthaloylglycine-1-^{14}C and of some simple glycyl-1-^{14}C peptides. Acta chimica Hung 35 no.2:213-216 '63.

1. "Reanal" Fine Chemical Factory, Budapest; National Atomic Energy Commission Institute of Isotopes, Budapest; Central Research Institute for Chemistry, Hungarian Academy of Sciences, Budapest.

BANFI, DEZSO

Chemical Abst.
Vol. 48 No. 4
Feb. 25, 1954
Biological Chemistry

The structure of brain sphingosine. József Kiss and Dezső Bánfi (Univ. Szeged, Hung.). *Magyar Kém. Folyóirat* 59, 232–4 (1953); cf. *C.A.* 47, 8644h.—Natural sphingosine was converted by ozonolysis into α,γ-dihydroxy-β-aminobutyrolactone. The latter was then converted into threoninol or into a related compd. of known configuration. Aminotetrose was isolated in form of its dinitrophenyl osazone among the decompn. products of the ozonolysis of diacetylsphingosine. Aminotetronic acid obtained at the ozonolysis of triacetylsphingosine was sepd. in a cryst. form as its well defined lactone-HCl. István Fináy

PART 1 2

HUNG.

Sphingosine and sphingolipides. XII. Correlation of the configuration of (natural) sphingosine with that of D-erythro-2-amino-3,4-dihydroxybutyric acid. L. Ivan, G. Fodor, and D. Bauk (Univ. Szeged, Hung.). *Helv. Chim. Acta* 37, 1473-80 (in German); cf. *C.A.* 49, 6088*h*. Triacetyl-sphingosine (I), 5 g. in 80 ml. abs. $CHCl_3$, was treated (80 min. with 5% ozone. The $CHCl_3$-used. ozonide (oil) was heated (80–100°) with 80 ml. H_2O, then was chilled and the H_2O was decanted. The dried (desiccator with $CaCl_2$) residue (3.1 g.), crystd. from petr. ether, gave 0.42 g. myristic acid (II), m. 51–3°. The petr. ether soln. gave a residue yielding 0.7 g. myristaldehyde 2,4-dinitrophenylhydrazone, m. 108.7° (from EtOH). Ozonolysis of 6 g. I (contg. fat-sol. materials) gave a product which treated in 50 ml. alc. with 4.5 ml. 2*N* NaOH and 3.7 g. S-benzylisothiouronium chloride in 50 ml. alc. added gave 2.5 g. of the salt of II, m. 138° (from EtOH). The H_2O-sol. ozonolysis product was decolorized with C and evapd. *in vacuo* to give 2.52 g. residue; this in 15 ml. dioxane mixed with 8 ml. EtSH and 6 ml. 6*N* HCl in dioxane and shaken 4–5 days in a bomb tube, gave 2.36 g. crude product, which in turn gave 0.143 g. L-amino-3-hydroxybutyrolactone-HCl (III), m. 210–21° (decompn.), $[\alpha]_D^{20}$ 47.2° (*c* 0.554, H_2O). Evapg. the $CHCl_3$

from 3 g. ozonized I gave an oil which was warmed 30 min. at 80–90° (bath) with 50 ml. 30% H_2O_2. Evapn. of the aq. soln. gave 1.5 g. oil; this on standing 1 week in 25 ml. 3*N* HCl, concg., adding alc. and C_6H_6, evapg., and crystg. the residue from 10 ml. alc. gave 0.01 g. III. Evapn. of the filtrate and 2 extns. of the residue (0.54 g.) with alc. gave serine. III (0.28 g.) in 15 ml. H_2O was shaken 3 days with H and 0.4 g. Pd-C (12% PdO), the combined filtrate and washings evapd. *in vacuo*, and the residue treated with two 20-ml. portions EtOH and EtOH-Et_2O to give 0.142 g. 3-amino-2,4-dihydroxybutyraldehyde-HCl (IV), m. 207–8° (decompn.). $[\alpha]_D^{25}$ 22.5° (*c* 0.4, H_2O). IV (0.11 g.) in 15 ml. H hydrogenated 4 weeks with 0.5 g. Pd-C, the filtrate and washings evapd. *in vacuo*, and the residue, crystd. from MeOH-Et_2O, gave 0.035 g. hygroscopic D-(−)-*erythro*-2-amino-1,3,4-butanetriol-HCl (V), m. 202–4°, $[\alpha]_D^{25}$ −1.78° (*c* 0.554, H_2O). IV could also be hydrogenated with

Raney Ni at 120 atm. and 80°. D-*threo*-2-Benzamido-3,4-dihydroxy-γ-butyrolactone (3 g.) and 10 ml. $SOCl_2$ gave L-(+)-*erythro*-2-amino-3-hydroxy-γ-butyrolactone·HCl (VI) by the method of Hamel and Painter (*C.A.* **48**, 3906b). A by-product (0.8 g.), m. 190–1° (from alc.), is putative 2-benzamido-3-chloro-4-hydroxy-γ-butyrolactone (VII), $[\alpha]_D^{25}$ −120° (*c* 0.3, EtOH). An aq. suspension of 1.2 g. VII treated with 10 ml. *N* NaOH gave 0.7 g. 2-phenyl-5-hydroxymethyl-4-carboxyoxazole lactone (VIII), m. 159–61° (from 1:1 EtOH-petr. ether). Heating (100–5°) 2-phenyl-5-hydroxymethyl-4-carboxyoxazoline lactone·HCl also gave VIII. VIII was optically inactive and could not be hydrogenated at 100 atm. with Raney Ni. VI (2.5 g.) (H. and P., *loc. cit.*) in 150 ml. H_2O with 15 g. Raney Ni hydrogenated 12 hrs. at 90° and 120 atm., 0.1 g. Mg powder added, hydrogenation continued 4 hrs. at 100–5° and 130 atm. (when the Fehling test was neg.), the combined filtrate and washings concd. *in vacuo* and evapd. with alc. C_6H_6, and the residue (2.1 g.) crystd. from MeOH-Et_2O gave L-(+)-*erythro*-2-amino-1,3,4-butanetriol·HCl (IX), m. 201–3° (foaming), $[\alpha]_D^{25}$ 1.67° (*c* 3, H_2O). IX is the antipode of V. Similar reduction of 2.5 g. of the D-isomer of VI (H. and P., *loc. cit.*) gave 0.8 g. V, $[\alpha]_D^{25}$ −1.63° (*c* 0.8, H_2O), m. 203° (decompn.), which did not depress the m.p. of V from L-Thus sphingosine is D-*erythro*-2-amino-1,3-dihydroxy-4-*trans*-octadecene. George H. Sutherland

BANFI, D.

Stereochemical and synthetic studies in the sphingosine field. IX. Ozonolysis of natural sphingosine. T. Kiss, G. Fodor, and D. Bánfi (Univ. Szeged). *Acta Chim. Acad. Sci. Hung.* 5, 391–6 (1955) (in English); cf. *C.A.* 49, 4821e.—To correct a literature discrepancy (Klenk and Diebold, *C.A.* 25, 4278; Niemann and Nichols, *C.A.* 36, 3784[9]), the ozonolysis of sphingosine (I) and its derivs. was reinvestigated. The crude sulfate of I (87 g.), obtained by the acid hydrolysis of sphingolipides from the brain and spinal cord of cattle according to Carter, *et al.* (*C.A.* 41, [illegible]), suspended in 1 l. 0.5 *N* NaOH, extd. 4 times with 1 l. ether, the solid residue from the evapn. of the combined ether exts. dissolved in 120 ml. dry C_5H_5N, treated at 0° with 120 ml. Ac_2O, and heated 15 min. yielded, after standing a day in the cold, 20.3 g. tri-Ac deriv. (II) of I, m. 102–4°, $[\alpha]_D^{19}$ −9.7° (*c* 1.1, $CHCl_3$). Alk. hydrolysis of II gave crude I, m. 60–78°, which (1.1 g.) was reacetylated to yield 1.1 g. II, identical with the preceding sample. Thus, no Walden inversion had occurred during the prepn. of II from lipides by their acid hydrolysis, followed by the alk. hydrolysis of II (cf. Jenny and Grob, *C.A.* 49, 8575). Partial alk. hydrolysis of 6.4 g. II in 200 ml. MeOH by letting it stand 12 hrs. at 18° with 40 ml. *N* KOH in MeOH, evapg. the mixt. to 100–20 ml. at 30°, adding 200 ml. H_2O, and extg. with ether yielded from the ether ext. 3 g. *N*-Ac deriv. (III) of I, m. 60–5°, $[\alpha]_D^{19}$ −5.5° (*c* 2, $CHCl_3$); mixed m.p. with the dihydro deriv. of III, 62–111°. The mother liquor from the prepn. of pure II freed from the solvent *in vacuo* and the residue dissolved in $CHCl_3$ and neutralized gave an oil, $b_{0.001}$ 170–90° (bath temp.), $[\alpha]_D^{19}$ −6° (*c* 2, $CHCl_3$), probably $C_{11}H_{23}CH{:}CHCH(OR')$-$CH(NHR)CH_2OR'$ (R = R' = Ac, R' = Me). I (1.3 g.) from the alk. hydrolysis of 2 g. II in 10 ml. dry C_5H_5N treated with 4 g. *p*-$O_2NC_6H_4COCl$, heated 15 min. on a steam bath, allowed to stand 1 day at room temp., 50 ml. H_2O added, and the mixt. extd. with $CHCl_3$ yielded 1.14 g. tris-(*p*-nitrobenzoyl) deriv. (IV) of I, m. 136–9 (from 90% Me_2CO-H_2O). Similar treatment of 2 g. dihydrosphingosine (V) gave 2.5 g. tris-(*p*-nitrobenzoyl) deriv. (VI) of V, m. 144–5° (from abs. EtOH); mixed m.p. with IV, 138–42°. Alk. hydrolysis of VI gave the *N*-*p*-O_2N-C_6H_4CO deriv. (VII) of V, m. 124–8° (from dil. EtOH). The stability and crystn. properties of IV, VI, and VII

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J. Kiss

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were not appropriate for ozonolysis, and only I and II were used. O_3 (5%) bubbled through 8 g. II in 100 ml. $CHCl_3$ 1.5 hrs. at room temp. pptd. the ozonide, and evapg. the $CHCl_3$ *in vacuo*, shaking the residue 60 min. with 100 ml. H_2O, and cooling in ice yielded 4 g. H_2O-insol. oil (VIII), sepd. by petr. ether into (1) 0.6 g. petr. ether-sol. myristic acid, m. and mixed m.p. 51–2°, S-benzylisothiuronium salt, m. 138° (cf. Douleavy, *C.A.* 30, 5192[3]), and (2) glacial AcOH-sol. myristaldehyde (IX), which reduced Fehling soln. and yielded 0.7 g. 2,4-dinitrophenylhydrazone (X) of IX, m. 104–5° (from EtOH). The aq. layer sepd. from VIII also reduced Fehling soln., and after evapn. of the solvent, the residual (2.28 g.) syrup was acetylated to 0.52 g. $AcOCH_2CH(NHAc)CH(OAc)CHO$, noncryst. but characterized by its compd. with $2,4\text{-}(O_2N)_2C_6H_3NHNH_2$, probably the osazone of $AcOCH_2CH(NHAc)COCHO$, m. 173–8° (decompn., softening at 160°). Also from the combined aq. mother liquors of the preceding ozonolysis products, acidified, evapd. to dryness, and the residue extd. with hot abs. EtOH, was obtained 0.3 g. *3-amino-2-hydroxy-4-butyrolactone HCl salt*, m. 218–20°, $[\alpha]_D^{25}$ 47.2° (*c* 0.558, H_2O), which fails to give ninhydrin and Fehling soln. tests. Similar ozonolysis of I gave no isolatable products except X. The splitting at the double bond was attempted also through the epoxide: 5.1 g. II in 12 ml. $CHCl_3$ treated with 0.35 g. BzO_2H in 5 ml. $CHCl_3$, allowed to stand 2 days at 0°, and evapd. *in vacuo* gave a yellow oil, whose ether-insol. portion yielded 1.55 g. epoxide (XI) of II, m. 134–6° (from Me_2CO), $[\alpha]_D^{25}$ 16.6° (*c* 0.6, $CHCl_3$) (*C.A.* 47, 8044*h*). Hydrolysis of 0.5 g. XI by heating 6 hrs. at 120–30° in a sealed tube with 10 ml. H_2O gave a tri-Ac deriv. of an amino tetraol, but periodic oxidation failed, probably because of the migration of an Ac group so that no vicinal OH groups remained. X Preparation of several long-chain aliphatic ketones. I Gallay. *Ibid.* 549–58 (in German) (English summary).—As a step toward complete synthesis of sphingosine, the key compd., $n\text{-}C_{12}H_{25}CH{:}CHAc$ (I), was prepd., after preliminary expts. on model compds. $n\text{-}C_{14}H_{29}OH$ 484.8 g. warmed 7 hrs. on a steam bath with 396.7 g. $POCl_3$ according to Pilmmer and Burch (*C.A.* 23, 2417), gave 646 g. crude $C_{14}H_{29}OPO_2H_2$ (II), m. 73–82° (sample recrystd. from $CHCl_3$). Distn. and redistn. of 200 g. II *in vacuo* gave the fractions (g., b.p., n_D^{25}): 123.5, b_{11} 147–7[illegible] [illegible] b_{11} 148–53°, 1.4424; 76, b_{11} 155–7°, 1.4437; III [illegible] 155–7°, 1.4445. Ozonolysis of III according to Angyal and Eckroldt (*C.A.* 38, 57[3]) yielded 8.2 g. mixed acids sepd. by vacuum distn. into 0.6 g. lauric, b_{11} 90–172°, and 5.1 g. myristic acid, m. 34–40°, characterized by their *S*-benzylisothiuronium salts, m. 140–1° and 139°, resp. A shift of the double bond had obviously occurred during the thermal

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decompn. of II. The desired pure 1-C_9H_{17} (IV) was prepd. from $C_9H_{19}O_2CC_9H_{17}$ (V) according to Waterman, *et al.* (*C.A.* 24, 823) by heating 1300 g. V under N 4 hrs. from b_{760} 330° to b_{20} 360°, giving 951 g. distillate (332 g. C_9H_{19}-CO_2H as residue). The oily distillate in 1 l. petr. ether (b. 30–50°) washed with 3% NaOH and then EtOH, dried, treated with Na wire, refluxed 5 hrs., filtered, neutralized, and dried again gave 448 g. crude IV, fractionally distd. *in vacuo* to yield 236 g. pure IV, b_{18} 153–7°, n_D^{25} 1.4415. Ozonolysis of 30 g. IV yielded the expected $C_9H_{19}CHO$ (25 g. crude), m. 23–5° (from EtOH); 2,4-dinitrophenylhydrazone, m. 102–3° (cf. Landa, *C.A.* 20, 362). IV (22.4 g.) in 50 ml. CS_2 and 14.4 ml. AcCl in 20 ml. CS_2 at −20° treated during 30 min. with rapid stirring with 13.3 g. $AlCl_3$ [illegible] after 10 hrs. decompn. and purification, [illegible] $C_9H_{19}CH.CHAc$ (VI; and, after [illegible] only 7.0%) pure VI, b_{15} 155–63° [semicarbazone, m. 116–18° (from EtOH)]. This small yield led to the investigation of a method for analogs of VI [$CdMe_2$ (VII) with α,β-unsat. acid chlorides] previously used for the synthesis of satd. ketones (Gilman and Nelson, *C.A.* 30, 5951⁶). As preliminary model expts., 0.1 mole VII, prepd. according to Cason (*C.A.* 41, 307g), in dry C_6H_6, was treated with ice cooling during 10 min. with 0.1 mole $C_9H_{17}COCl$ (VIII) in 20 ml. dry C_6H_6, and the mixt. refluxed 1 hr., cooled to 0°, and poured onto 200 ml. 10% ice-cold H_2SO_4; from the C_6H_6 layer was obtained 75% $C_9H_{17}Ac$, m. 53.5° (semicarbazone, m. 119°). Similar treatment of $C_9H_{19}COCl$ in place of VIII yielded 70% $C_9H_{19}Ac$ (IX), m. 46–8°; semicarbazone (X), m. 121–2°. These 2 good yields encouraged the use of VII in the prepn. of the desired I. $C_9H_{19}CH:CHCO_2H$ was prepd. according to Myers (*C.A.* 46, 1438g), and its acid chloride (XI), m. 166–8°, with $SOCl_2$ in the usual way. Treatment of 0.1 mole XI with 0.1 mole VII as above yielded 80% crude and 59% pure I, b_2 156–60°, n_D^{25} 1.4450 (semicarbazone, m. 110–12°; mixed m.p. with X, 118–20°), taken as evidence for a *trans*-ethylenic configuration in I (cf. Fidler and Kiss, *C.A.* 48, 3252e). Ozonolysis of I, followed by H_2O_2 oxidation, gave 80% myristic acid, and reduction of I by Pd-C gave IX, both results being confirmations of the structure of I. The attempted condensation of I with Et_2CO_3 in the presence of NaH (cf. Soloway and La Forge, *C.A.* 42, 1204*h*) gave unexpectedly 3-C_9H_{19}, with perhaps a small amt. of $C_9H_{19}CH:CHCOCH_2CO_2Et$; this reaction will be further investigated. XIII. Preparation of *dl*-*threo*-2-acetamido-1,3-diacetoxyoctadecane. I. Sallay and F. Patka. *Ind.* 359–63(in English); cf. *C.A.* 49, 9624c.—The previously reported synthesis (*C.A.* 49, 6098b) of *n*-$C_8H_{17}CH(OH)CH(NHAc)CH_2OH$ (I) is modified by the use of the Japp-Klingemann reaction [*Chem.* 247, 216 (1888)] on Et palmitoylacetoacetate (II). Fused C_9H_{19}-CO_2H, treated with $SOCl_2$ according to Robertson and Soper (*C.A.* 33, 5858⁵) yielded 70% pure $C_9H_{19}COCl$ (III), b. 155.2 8.0°. Adding 55.2 g. AcCH:C(OEt)ONa in 400 ml. ether dropwise to 9.36 g. pow. Na in 400 ml. [illegible] starting to [illegible] flusing 2 addnl. hrs., adding dropwise 97.7 g. III in ether ice-cold mixt., refluxing 1 hr., and pouring into 150 ml. 10%

(A-2)

J. Kiss

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HCl yielded from the ether layer 129.1 g. (99%) II, b$_{0.05}$ 175° (cf. Viscontini and Merckling, *C.A.* 47, 12252e). *p*-$O_2NC_6H_4N_2Cl$ (from 2.67 g. *p*-$O_2NC_6H_4NH_2$) in 10 ml. ice-cooled H_2O added to 7.36 g. II in 12 ml. EtOH and 0.46 g. Na in 15 ml. EtOH and the resulting emulsion stirred 30 min. at room temp. yielded from the ether ext. 1.6 g. (16.9%) *p*-$O_2NC_6H_4NHN:C(CO_2Et)COC_6H_5$ (IV), m. 72–3° (from EtOH). On hydrogenation over Pd-C in 25 ml. abs. EtOH acidified with 2.4 ml. 20.7% HCl in dry ether, 0.95 g. IV absorbed 220 ml. H (theoretical, 224 ml.) to yield inactive $C_6H_5COCH(CO_2Et)NH_2Cl$ (V), m. and mixed m.p. 114–16° (from AcOEt) (yield not given). Previously reported procedures (*loc. cit.*) changed V by means of Ac_2O and AcOAg to 67% inactive $C_6H_5COCH(CO_2Et)NHAc$, m. 71–3° (2,4-dinitrophenylhydrazone, m. 195–7°), and thence by means of $LiBH_4$ (Kollonitsch, *et al.*, *C.A.* 49, 2295h) to 90% mixed *threo*- and *erythro*-racemates of I, m. 90–107°, sepd. by fractional crystn. of the tri-Ac derivs. (VI). The mixed racemates (1.815 g.) in 60 ml. dry C_5H_5N and 6.3 ml. Ac_2O kept 48 hrs. at 20°, evapd. *in vacuo* at 40°, and the residue taken up in ether yielded 2.05 g. (91%) crude VI, m. 50–70°. Fractional recrystn. from petr. ether (b. 25–40°) sepd. 2 compds., m. 80–2° and 66–8°, resp. [cf. for the *threo*-racemate of I, m. 67–8° and 65–8°, found by Grob, *et al.* (*C.A.* 46, 6500a), and Carter, *et al.* (*C.A.* 48, 9937g), resp.]. XIV. Structure of sphingoglycosides. J. Kiss and I. Jurcsik. *Ibid.* 477–80 (in English).—A preliminary communication. The only unsolved structural problem for the 3 sphingoglycosides (I) is the question of α- or β-linkage of the galactose. Cerebron, kerasin, and nervon were separately hydrolyzed and $[\alpha]_D^{20}$ values detd. for the liberated sugars, together with those for the hydrolysis product of α-Et galactose. Curves for $[\alpha]_D^{20}$ values vs. time are similar for all 4 sugars, and the α-linkage is therefore probable for all. This conclusion is confirmed by the slow (72 hrs.) rate of mercaptolysis at room temp. of I (cf. Lemieux, *C.A.* 48, 1334b) and by enzymic tests. Expt. details are to be reported later.

H. S. French

BÁNFI, D.

1

Constitution of trimethylsulfoxonium iodide. D. Bánfi, G. Fodor, and L. Otvös (Hung. Acad. Sci., Budapest). *Chem. & Ind.* (London) 1959, 1162.—$C^{14}H_3I$ with Me_2SO gave $(C^{14}H_3Me_2SO)I$ (I), which was transmethylated with C_5H_5N and quinoline by the procedure of Kuhn and Trischmann (*C.A.* 52, 14523g) for the radioinactive compd. The quaternary salts formed were found to be 1/3rd as active as I, which was evidence for sym. bonding of the 3 Me groups and hence for the *S*-oxo-*S*-trimethylsulfonium salt constitution of the adduct. The results agreed with the structure suggested by K. and T. (*loc. cit.*) and by Smith and Winstein (*C.A.* 53, 4180e).

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HUNGARY

SZENDROI, L., Dr, NAGY, T., Dr, BANFI, I., Dr; Medical University of Debrecen, I. Surgical Clinic (Debreceni Orvostudomanyi Egyetem, I. sz. Sebeszeti Klinika).

"Successful Surgical Treatment of a Case of Acute, Complete Colon Necrosis."

Budapest, Magyar Sebeszet, Vol XIX, No 2, Apr 66, pages 114-117.

Abstract: [Authors' Hungarian summary] A case of acute, complete necrosis of the colon is described in which total colectomy was performed with success. Transgressions in the diet were responsible for the necrosis and it was assumed that the faulty diet, an unusually potent chemical stimulus, led to the development of necrosis of the colon section which has earlier been maintained on a very poor blood supply. 12 Hungarian, 8 Western references.

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L 32861-65 EWT(m)/EWP(t)/EWA(m)-2/EWP(b) IJP(c) JD/JG

AUTHOR: Dang, Ye.N.; Mikhaylov, I.N.

TITLE: Calculation of the properties of rare earth nuclei with the aid of

TOPIC TAGS: nuclear model, pairing correlation, excited state, beta decay,

ABSTRACT: Earlier calculations by one of the authors (I.N.Mikhaylov, Zhur.eksp. teor.fiz.45,1102,1963) and by V.G.Solov'yev (Ibid.43,246,1962), embodying ments on the u,v transformation method for solving the Schrödinger equation for the pairing ments between different nuclear states. It is also shown that formulas derived in the first reference cited above contain all the corrections of order transformation method, where N is the total number of nucleons. The type constants were obtained by comparing the

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perimental values of the pairing energy, and a number of properties
nuclei were evaluated. The results are tabulated. These include the
ticle excited state spectra of Yb^{172} and W^{182}, and the ft values
of the excited states differ very
present the
ascribed to factors that are not
makes their use suitable for any inferences concerning
nuclear theory. The authors express their sincere gratitude to their
colleagues, particularly to thank N.I.Pyatov and V.G.Solov'yev. We are also grateful to the staff of the Computing Center of the OIYaI for performing the computations. The stay of one of the authors (Ye.Bang) in Dubna was made possible by financial support from the University of Copenhagen and the H.Oersted Fund and also by the hospitality of the OIYaI." Orig.art.has: 39 formulas and 5 tables.

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L 32861-65
ACCESSION NR: AP5004533

ASSOCIATION: Laboratoriya teoreticheskoy fiziki Ob"yedinennogo instituta yadernykh issledovaniy (Theoretical Physics Laboratory, Joint Institute for Nuclear Research)

SUBMITTED: [illegible] ENCL: 00

Card 3/3

B.BANGA, Ilona, a biologiai tudomanyok doktora, egyetemi docens

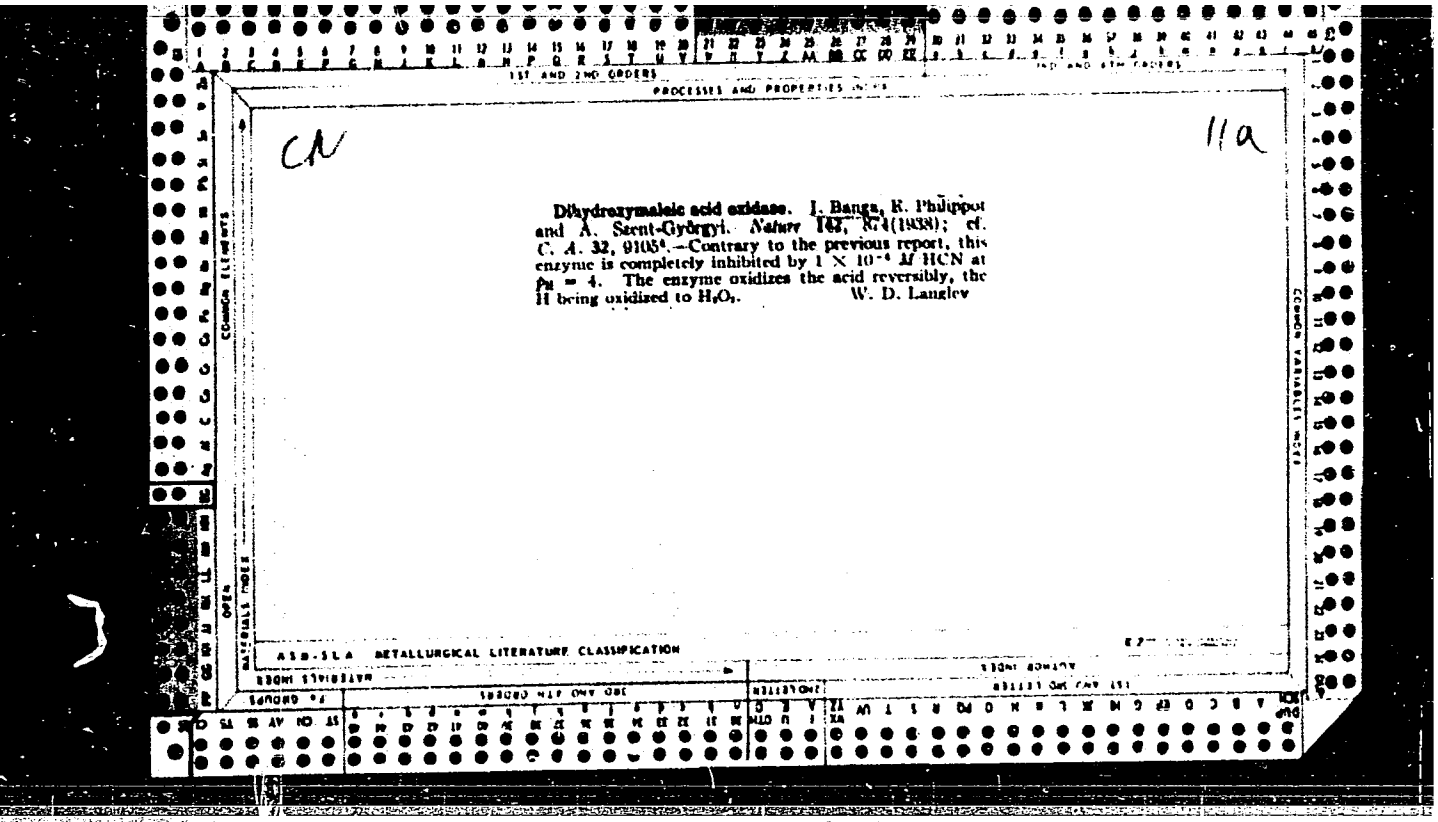
Report on the 6th International Congress of Biochemistry arranged by the International Union of Biochemistry. Magy tud 71 no.11:720-721 N '64.

1. Budapest Medical University.

BANGA, Ilona; MAYLATH-PALAGYI, Jolanda; JOBBAGY, A.

Fluorescing components in elastin. Acta physiol. acad. sci. Hung. 26 no.4:305-312 '65

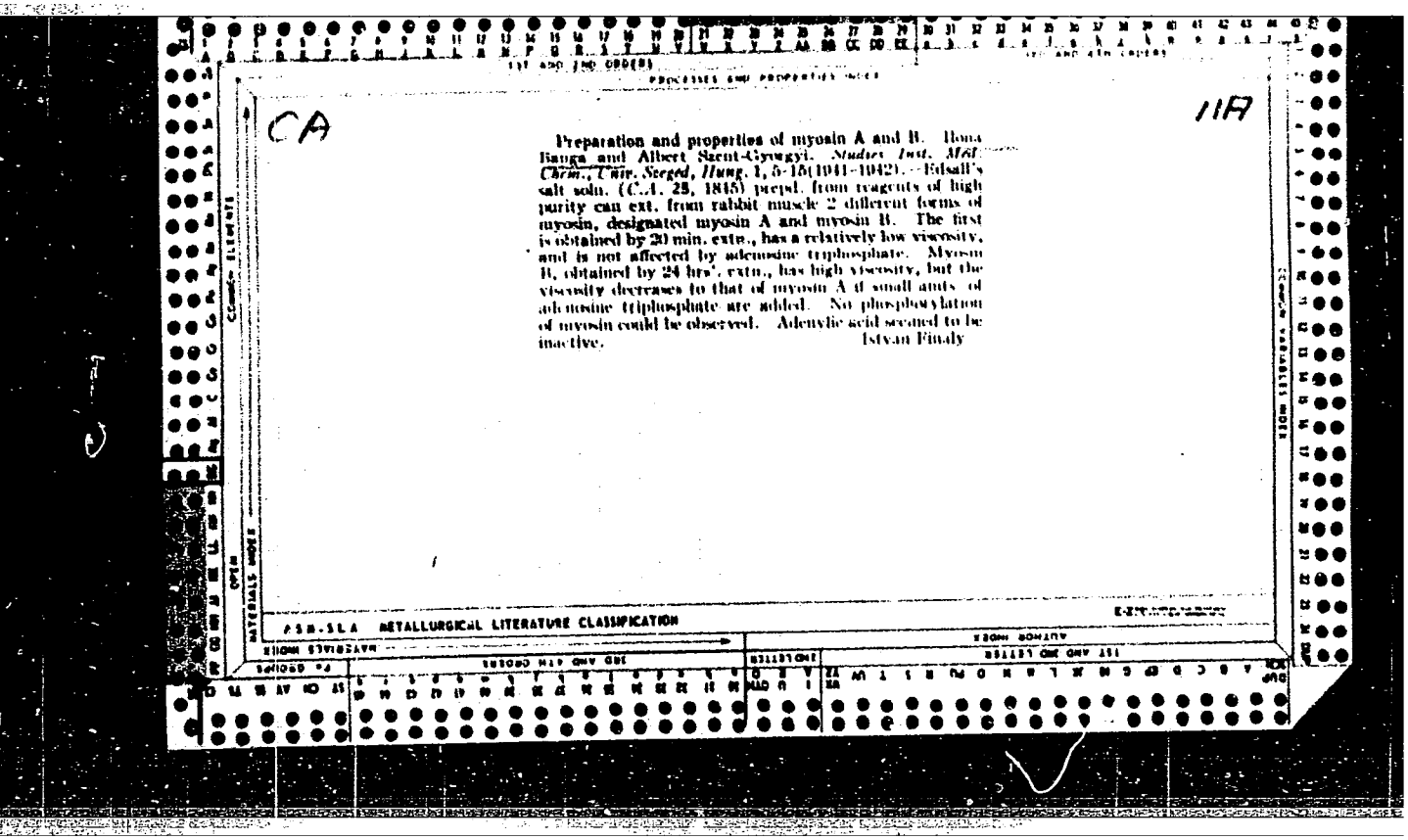
1. Institut für pathologische Anatomie und experimentelle Krebsforschung und Klinik für Haut-und Geschlechtskrankheiten der Medizinischen Universität, Budapest.



CN

11a

Dihydroxymaleic acid oxidase. J. Banga, R. Philippot and A. Szent-Györgyi. *Nature* 142, 874(1938); cf. C. A. 32, 9105⁶.—Contrary to the previous report, this enzyme is completely inhibited by 1×10^{-4} *M* HCN at $p_H = 4$. The enzyme oxidizes the acid reversibly, the H being oxidized to H_2O_2. W. D. Langley



CA

11A

Preparation and properties of myosin A and B. Ilona Banga and Albert Szent-Gyorgyi. *Studies Inst. Med. Chem., Univ. Szeged, Hung.* 1, 5-15(1941-1942).—Edsall's salt soln. (C.A. 25, 1845) prepd. from reagents of high purity can ext. from rabbit muscle 2 different forms of myosin, designated myosin A and myosin B. The first is obtained by 20 min. extn., has a relatively low viscosity, and is not affected by adenosine triphosphate. Myosin B, obtained by 24 hrs'. extn., has high viscosity, but the viscosity decreases to that of myosin A if small amts. of adenosine triphosphate are added. No phosphorylation of myosin could be observed. Adenylic acid seemed to be inactive. Istvan Finaly

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

CA

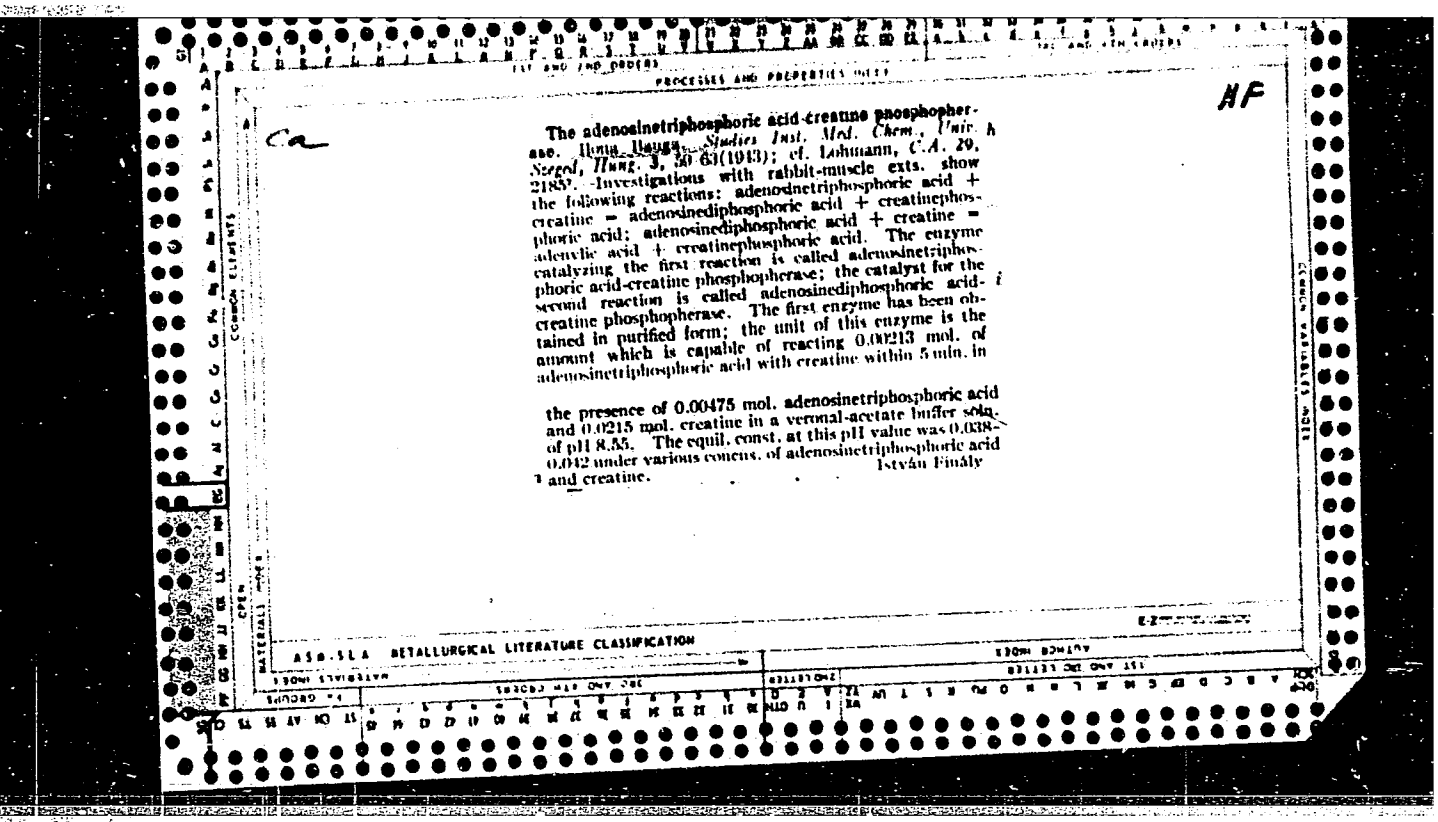
11A

The phosphatase activity of myosin Ilona Banga. *Studies Inst. Med. Chem., Univ. Szeged, Hung.* 1, 27-30 (1941-1942).—The statements of Engel'hardt and Lyubimova (*C.A.* **34**, 1070[9]) are affirmed. The phosphatase activity of myosin seems to depend on the presence of ions. Myosin A is activated by KCl less strongly than myosin B. Max. effect on myosin B was observed on treatment with $MgCl_2$; $MgCl_2$ had no effect on myosin A. Myosin activated by K and Mg is most active at the max. of its pptn. or contraction. Phosphatase activity of myosin was highest at pH 6; no activity was observable at pH above 8 or below 4. The activity began to decrease at elevated temps., and practically ceased at 55°. I. F.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

MATERIALS INDEX

AUTHOR INDEX



PROCESSES AND PROPERTIES INDEX

HF

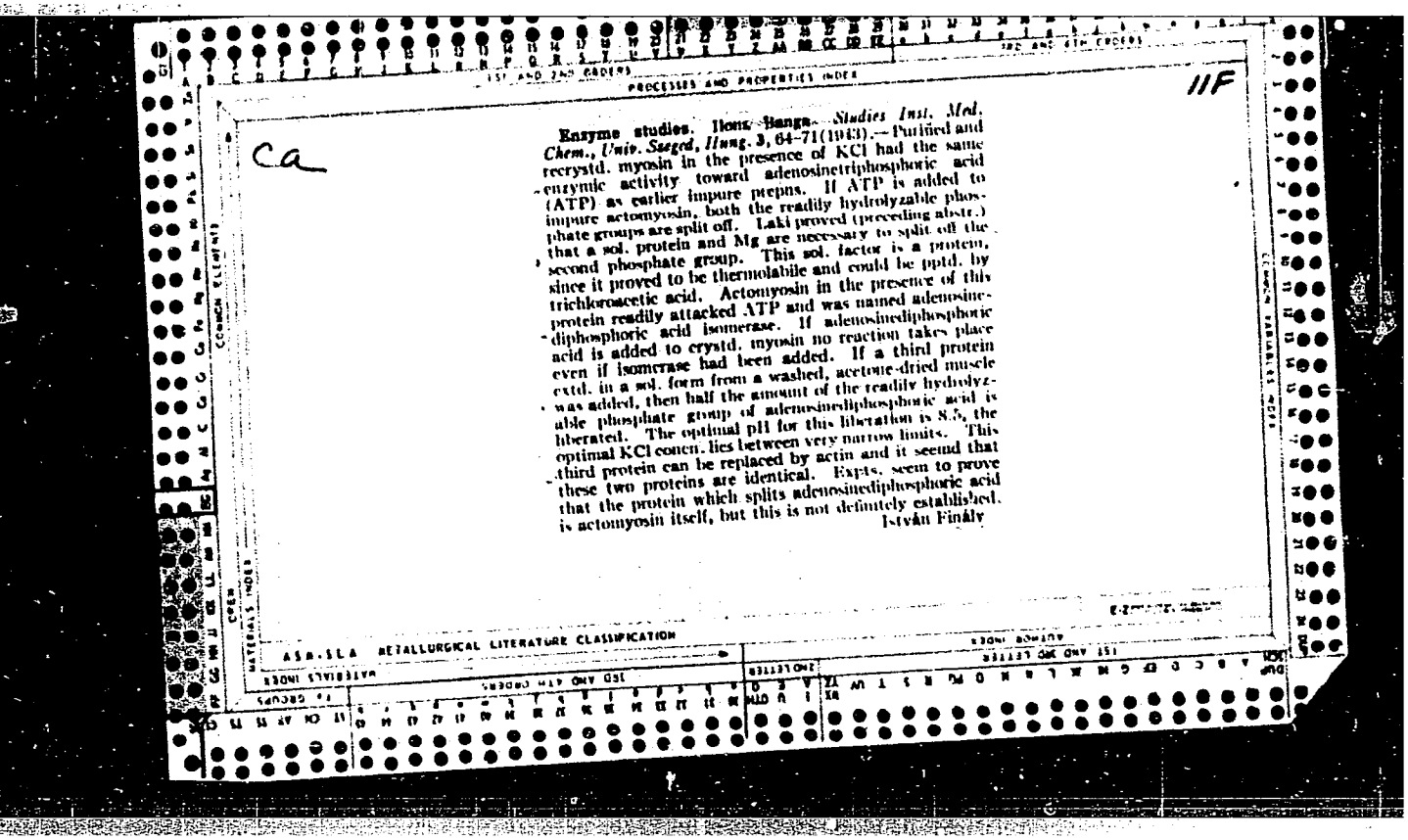
Ca

The adenosinetriphosphoric acid-creatine phosphopher-
ase. Ilona Hevesy. *Studies Inst. Med. Chem., Univ. h*
Szeged, Hung. 3, 50-63(1943); cf. Lohmann, *C.A.* 29,
2185?. Investigations with rabbit-muscle exts. show
the following reactions: adenosinetriphosphoric acid +
creatine = adenosinediphosphoric acid + creatinephos-
phoric acid; adenosinediphosphoric acid + creatine =
adenylic acid + creatinephosphoric acid. The enzyme
catalyzing the first reaction is called adenosinetriphos-
phoric acid-creatine phosphopherase; the catalyst for the
second reaction is called adenosinediphosphoric acid-
creatine phosphopherase. The first enzyme has been ob-
tained in purified form; the unit of this enzyme is the
amount which is capable of reacting 0.00213 mol. of
adenosinetriphosphoric acid with creatine within 5 min. in

the presence of 0.00475 mol. adenosinetriphosphoric acid
and 0.0215 mol. creatine in a veronal-acetate buffer soln.
of pH 8.55. The equil. const. at this pH value was 0.038-
0.042 under various concns. of adenosinetriphosphoric acid
and creatine.

István Finály

A58.51A METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

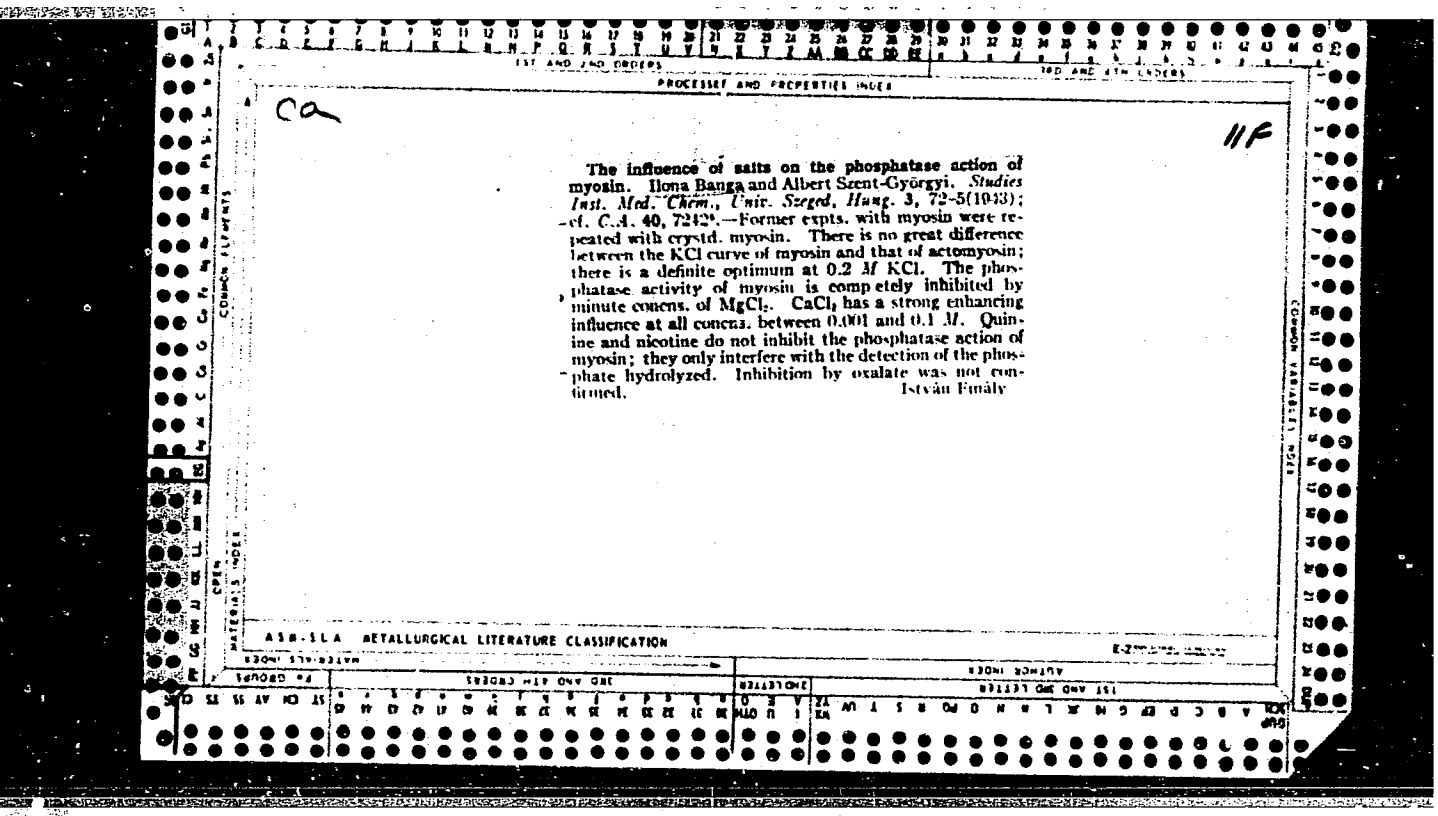
IIF

Ca

Enzyme studies. Ilona Banga. *Studies Inst. Med. Chem., Univ. Szeged, Hung.* **3**, 64–71 (1943).—Purified and recrystd. myosin in the presence of KCl had the same enzymic activity toward adenosinetriphosphoric acid (ATP) as earlier impure prepns. If ATP is added to impure actomyosin, both the readily hydrolyzable phosphate groups are split off. Laki proved (preceding abstr.) that a sol. protein and Mg are necessary to split off the second phosphate group. This sol. factor is a protein, since it proved to be thermolabile and could be pptd. by trichloroacetic acid. Actomyosin in the presence of this protein readily attacked ATP and was named adenosinediphosphoric acid isomerase. If adenosinediphosphoric acid is added to crystd. myosin no reaction takes place even if isomerase had been added. If a third protein extd. in a sol. form from a washed, acetone-dried muscle was added, then half the amount of the readily hydrolyzable phosphate group of adenosinediphosphoric acid is liberated. The optimal pH for this liberation is 8.5, the optimal KCl concn. lies between very narrow limits. This third protein can be replaced by actin and it seems that these two proteins are identical. Expts. seem to prove that the protein which splits adenosinediphosphoric acid is actomyosin itself, but this is not definitely established.

István Finály

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



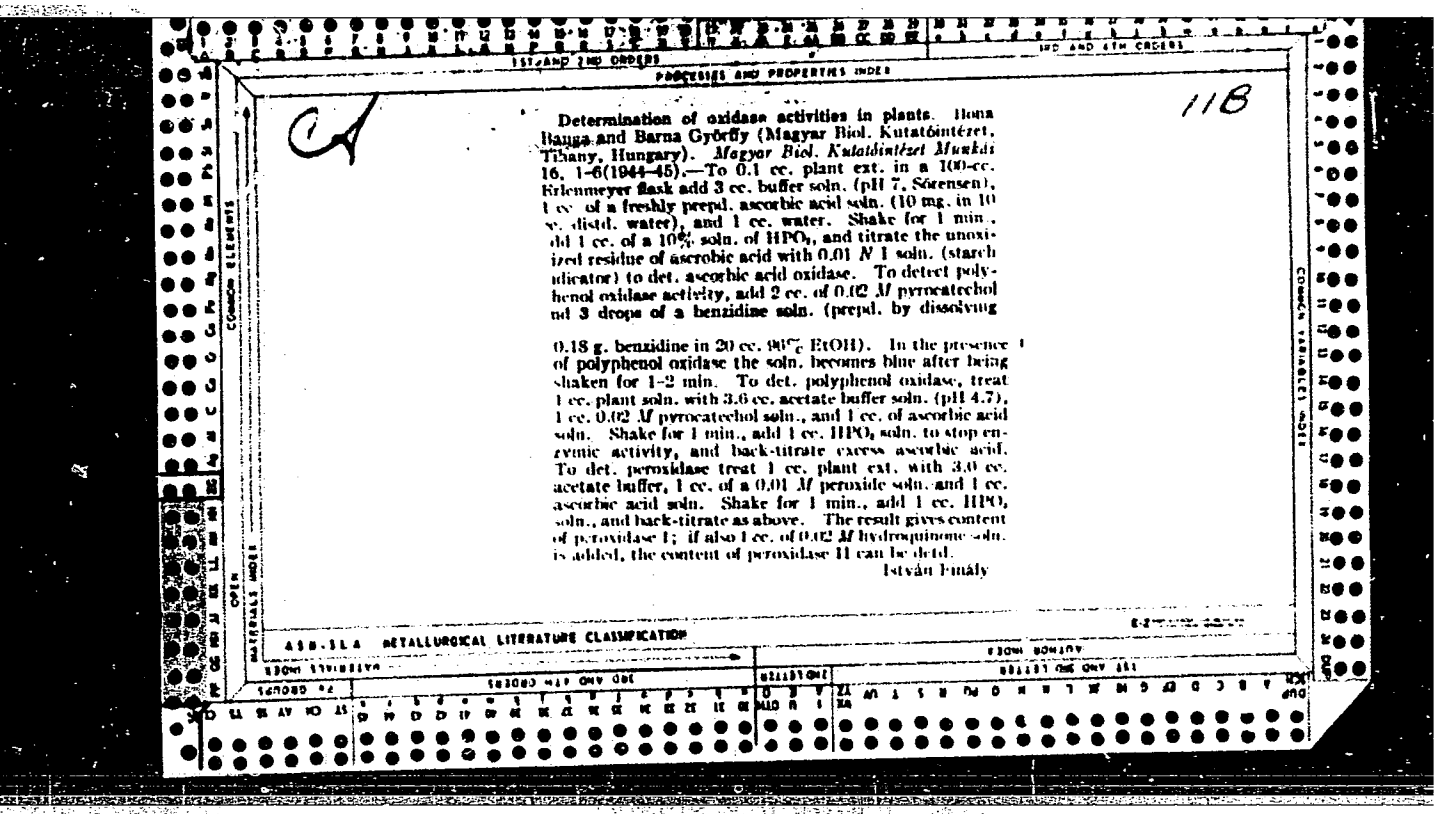
PROCESSES AND PROPERTIES INDEX

Ca

11F

The influence of salts on the phosphatase action of myosin. Ilona Banga and Albert Szent-Györgyi. *Studies Inst. Med. Chem., Univ. Szeged, Hung.* 3, 72-5(1943); cf. *C.A.* 40, 7242⁸.—Former expts. with myosin were repeated with crystd. myosin. There is no great difference between the KCl curve of myosin and that of actomyosin; there is a definite optimum at 0.2 *M* KCl. The phosphatase activity of myosin is completely inhibited by minute concns. of $MgCl_2$. $CaCl_2$ has a strong enhancing influence at all concns. between 0.001 and 0.1 *M*. Quinine and nicotine do not inhibit the phosphatase action of myosin; they only interfere with the detection of the phosphate hydrolyzed. Inhibition by oxalate was not confirmed. István Finály

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



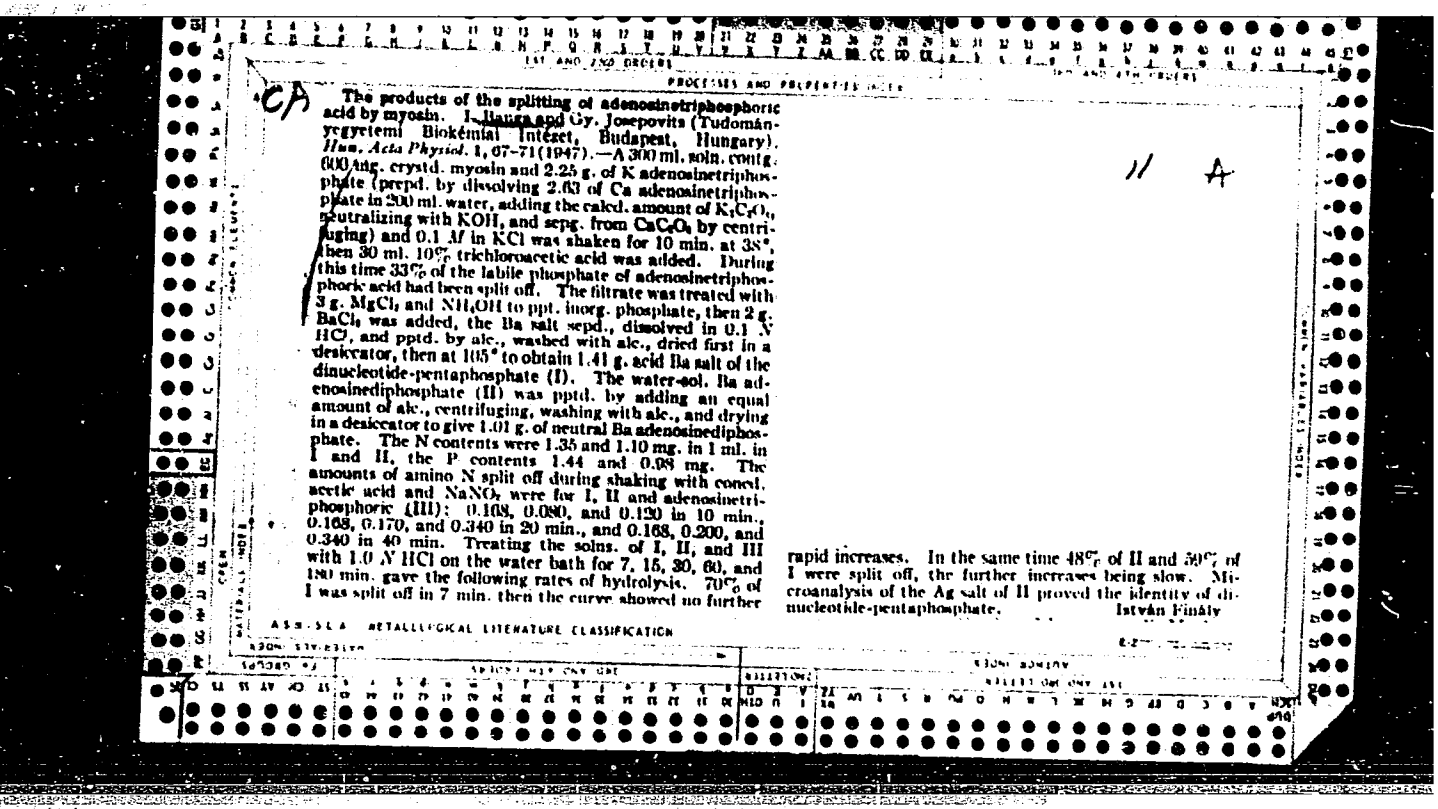
PROCESSES AND PROPERTIES INDEX

118

Determination of oxidase activities in plants. Ilona Banga and Barna Györffy (Magyar Biol. Kutatóintézet, Tihany, Hungary). *Magyar Biol. Kutatóintézet Munkái* 16, 1-6(1944-45).—To 0.1 cc. plant ext. in a 100-cc. Erlenmeyer flask add 3 cc. buffer soln. (pH 7, Sörensen), 1 cc. of a freshly prepd. ascorbic acid soln. (10 mg. in 10 cc. distd. water), and 1 cc. water. Shake for 1 min., add 1 cc. of a 10% soln. of HPO_3, and titrate the unoxidized residue of ascorbic acid with 0.01 *N* I soln. (starch indicator) to det. ascorbic acid oxidase. To detect polyphenol oxidase activity, add 2 cc. of 0.02 *M* pyrocatechol and 3 drops of a benzidine soln. (prepd. by dissolving 0.18 g. benzidine in 20 cc. 80% EtOH). In the presence of polyphenol oxidase the soln. becomes blue after being shaken for 1-2 min. To det. polyphenol oxidase, treat 1 cc. plant soln. with 3.6 cc. acetate buffer soln. (pH 4.7), 1 cc. 0.02 *M* pyrocatechol soln., and 1 cc. of ascorbic acid soln. Shake for 1 min., add 1 cc. HPO_3 soln. to stop enzymic activity, and back-titrate excess ascorbic acid. To det. peroxidase treat 1 cc. plant ext. with 3.0 cc. acetate buffer, 1 cc. of a 0.01 *M* peroxide soln. and 1 cc. ascorbic acid soln. Shake for 1 min., add 1 cc. HPO_3 soln., and back-titrate as above. The result gives content of peroxidase I; if also 1 cc. of 0.02 *M* hydroquinone soln. is added, the content of peroxidase II can be detd.

István Imály

A58-11A METALLURGICAL LITERATURE CLASSIFICATION



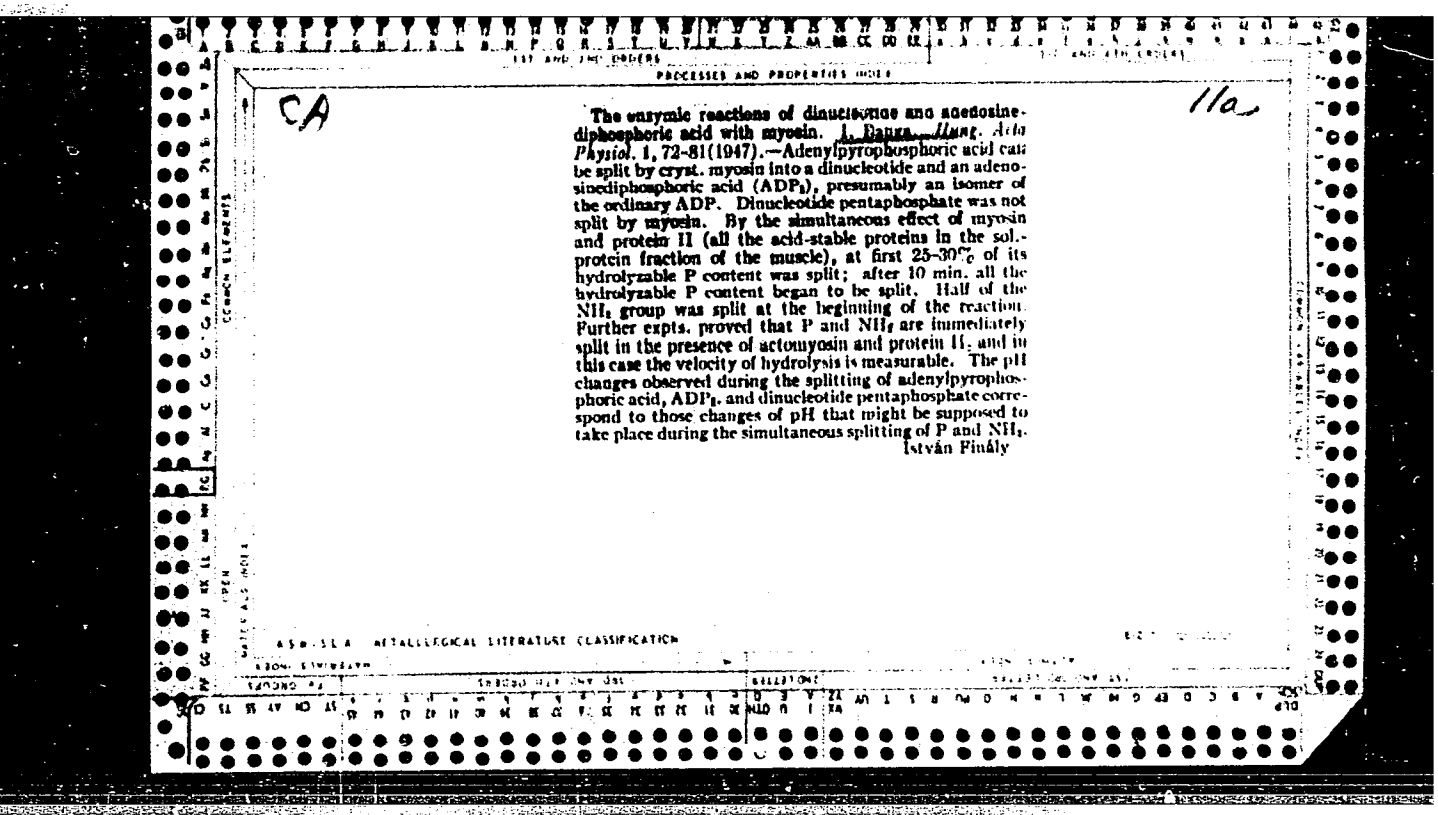
CA

The products of the splitting of adenosinetriphosphoric acid by myosin. I. Banga and Gy. Josepovits (Tudományegyetemi Biokémiai Intézet, Budapest, Hungary). *Hung. Acta Physiol.* 1, 67–71 (1947).—A 300 ml. soln. contg. 600 mg. crystd. myosin and 2.25 g. of K adenosinetriphosphate (prepd. by dissolving 2.63 of Ca adenosinetriphosphate in 200 ml. water, adding the calcd. amount of $K_2C_2O_4$, neutralizing with KOH, and sepg. from CaC_2O_4 by centrifuging) and 0.1 *M* in KCl was shaken for 10 min. at 38°, then 30 ml. 10% trichloroacetic acid was added. During this time 33% of the labile phosphate of adenosinetriphosphoric acid had been split off. The filtrate was treated with 3 g. $MgCl_2$ and NH_4OH to ppt. inorg. phosphate, then 2 g. $BaCl_2$ was added, the Ba salt sepd., dissolved in 0.1 *N* HCl, and pptd. by alc., washed with alc., dried first in a desiccator, then at 105° to obtain 1.41 g. acid Ba salt of the dinucleotide-pentaphosphate (I). The water-sol. Ba adenosinediphosphate (II) was pptd. by adding an equal amount of alc., centrifuging, washing with alc., and drying in a desiccator to give 1.01 g. of neutral Ba adenosinediphosphate. The N contents were 1.35 and 1.10 mg. in 1 ml. in I and II, the P contents 1.44 and 0.98 mg. The amounts of amino N split off during shaking with concd. acetic acid and $NaNO_2$ were for I, II and adenosinetriphosphoric (III): 0.108, 0.080, and 0.120 in 10 min., 0.168, 0.170, and 0.340 in 20 min., and 0.168, 0.200, and 0.340 in 40 min. Treating the solns. of I, II, and III with 1.0 *N* HCl on the water bath for 7, 15, 30, 60, and 180 min. gave the following rates of hydrolysis. 70% of I was split off in 7 min. then the curve showed no further rapid increases. In the same time 48% of II and 50% of I were split off, the further increases being slow. Microanalysis of the Ag salt of II proved the identity of dinucleotide-pentaphosphate.

István Finály

11 A

ASS-SLA METALLURGICAL LITERATURE CLASSIFICATION

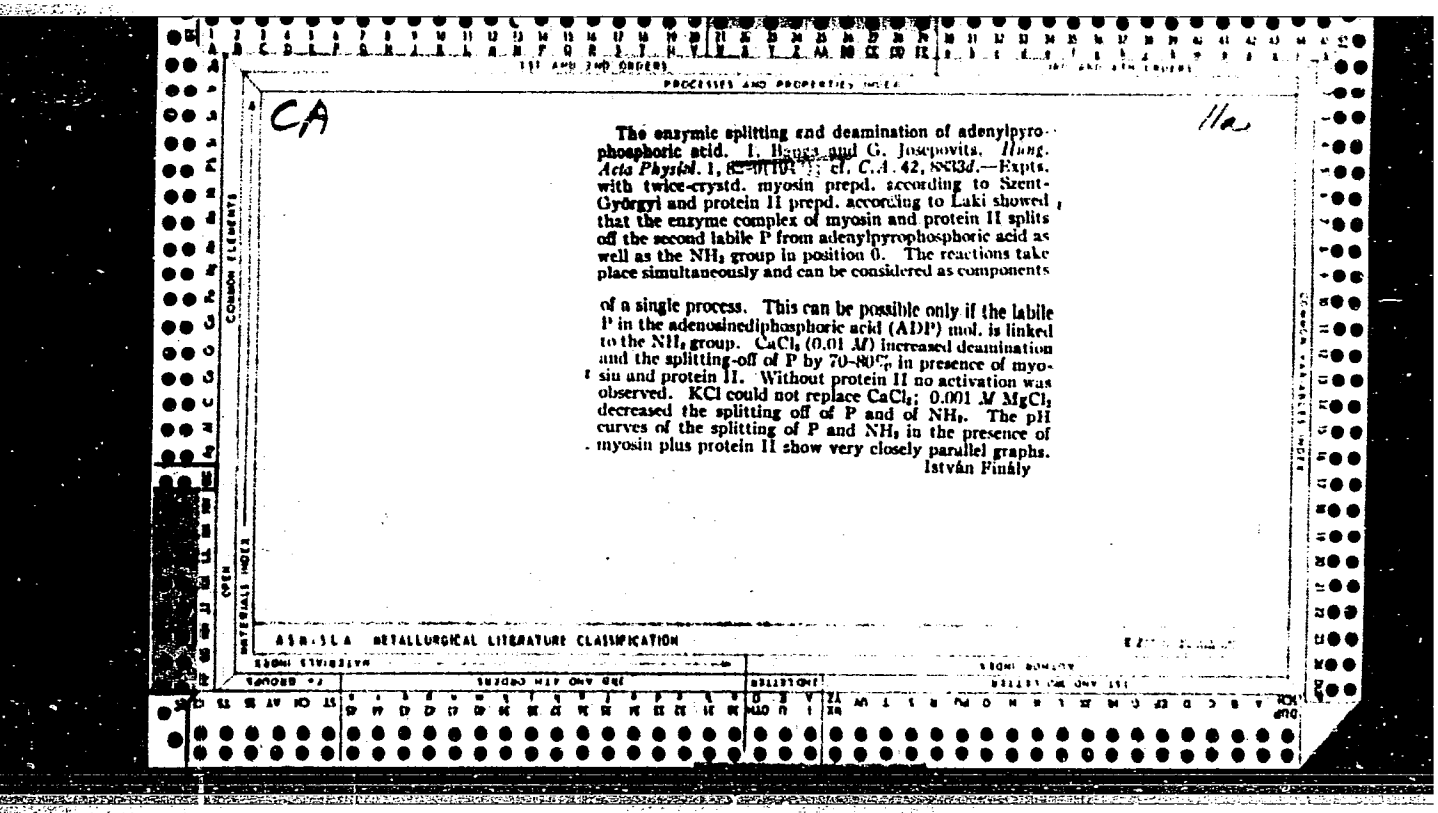


CA

11a

The enzymic reactions of dinucleotide and adenosinediphosphoric acid with myosin. I. Banga, Ilona. *Acta Physiol.* 1, 72-81(1947).—Adenylpyrophosphoric acid can be split by cryst. myosin into a dinucleotide and an adenosinediphosphoric acid (ADP_3), presumably an isomer of the ordinary ADP. Dinucleotide pentaphosphate was not split by myosin. By the simultaneous effect of myosin and protein II (all the acid-stable proteins in the sol.-protein fraction of the muscle), at first 25-30% of its hydrolyzable P content was split; after 10 min. all the hydrolyzable P content began to be split. Half of the NH_2 group was split at the beginning of the reaction. Further expts. proved that P and NH_2 are immediately split in the presence of actomyosin and protein II, and in this case the velocity of hydrolysis is measurable. The pH changes observed during the splitting of adenylpyrophosphoric acid, ADP_3, and dinucleotide pentaphosphate correspond to those changes of pH that might be supposed to take place during the simultaneous splitting of P and NH_2.

István Finály

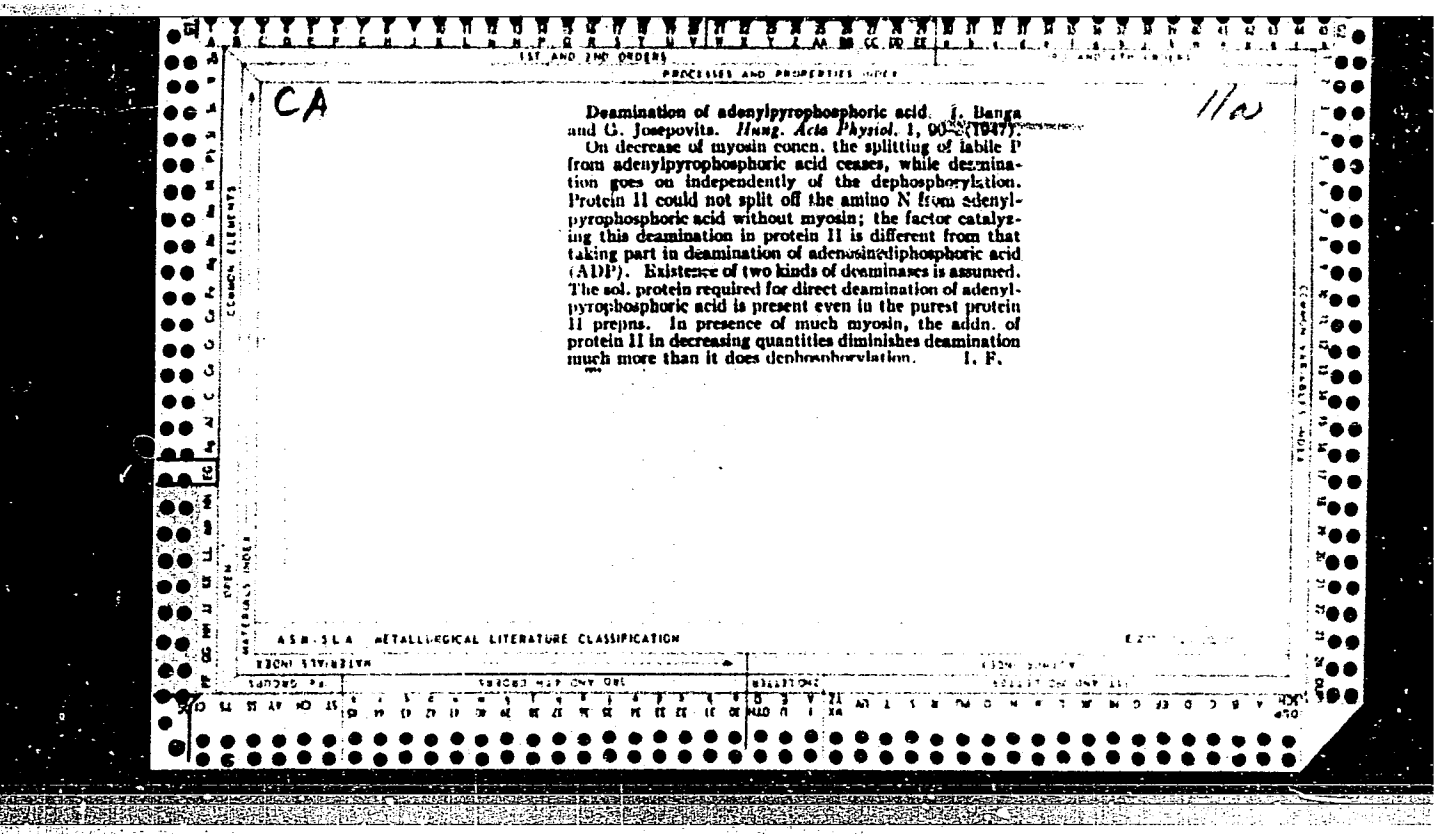


CA

11a

The enzymic splitting and deamination of adenylpyrophosphoric acid. I. Banga and G. Josepovits. *Hung. Acta Physiol.* 1, [illegible]; cf. *C.A.* 42, 8813*d*.—Expts. with twice-crystd. myosin prepd. according to Szent-Györgyi and protein II prepd. according to Laki showed that the enzyme complex of myosin and protein II splits off the second labile P from adenylpyrophosphoric acid as well as the NH_2 group in position 6. The reactions take place simultaneously and can be considered as components of a single process. This can be possible only if the labile P in the adenosinediphosphoric acid (ADP) mol. is linked to the NH_2 group. $CaCl_2$ (0.01 *M*) increased deamination and the splitting-off of P by 70–80% in presence of myosin and protein II. Without protein II no activation was observed. KCl could not replace $CaCl_2$; 0.001 *M* $MgCl_2$ decreased the splitting off of P and of NH_3. The pH curves of the splitting of P and NH_3 in the presence of myosin plus protein II show very closely parallel graphs.

István Finály

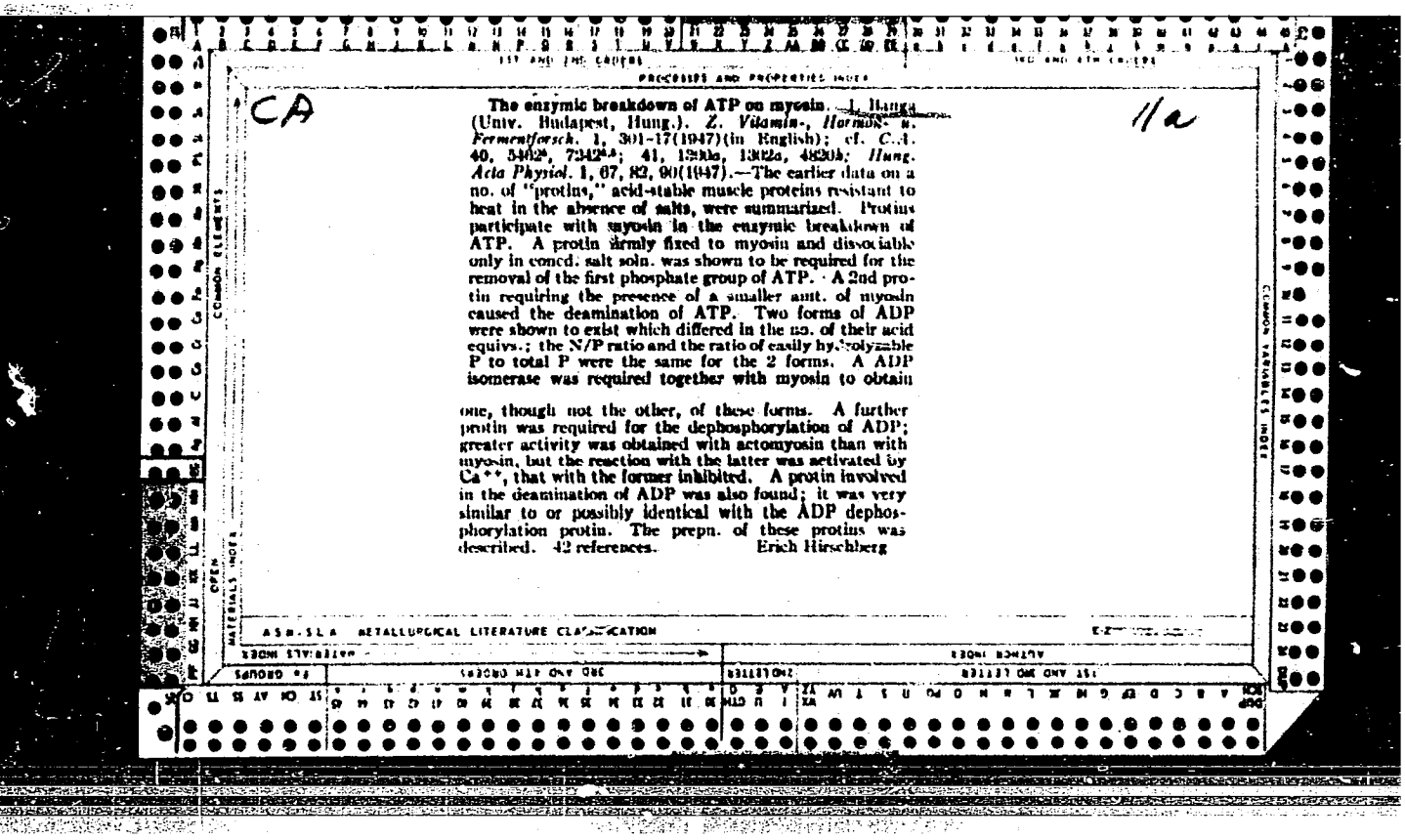


CA

11 ω

Deamination of adenylpyrophosphoric acid. J. Banga and G. Josepovits. *Hung. Acta Physiol.* 1, 90–[illegible] (1947).

On decrease of myosin concn. the splitting of labile P from adenylpyrophosphoric acid ceases, while deamination goes on independently of the dephosphorylation. Protein II could not split off the amino N from adenylpyrophosphoric acid without myosin; the factor catalyzing this deamination in protein II is different from that taking part in deamination of adenosinediphosphoric acid (ADP). Existence of two kinds of deaminases is assumed. The sol. protein required for direct deamination of adenylpyrophosphoric acid is present even in the purest protein II prepns. In presence of much myosin, the addn. of protein II in decreasing quantities diminishes deamination much more than it does dephosphorylation. I. F.



CA

11a

The enzymic breakdown of ATP on myosin. I. Banga (Univ. Budapest, Hung.). *Z. Vitamin-, Hormon- u. Fermentforsch.* 1, 301–17(1947)(in English); cf. *C.A.* 40, 5402⁸, 7342⁸·⁹; 41, 1293a, 1382a, 4820h; *Hung. Acta Physiol.* 1, 67, 82, 90(1947).—The earlier data on a no. of "protins," acid-stable muscle proteins resistant to heat in the absence of salts, were summarized. Protins participate with myosin in the enzymic breakdown of ATP. A protin firmly fixed to myosin and dissociable only in concd. salt soln. was shown to be required for the removal of the first phosphate group of ATP. A 2nd protin requiring the presence of a smaller amt. of myosin caused the deamination of ATP. Two forms of ADP were shown to exist which differed in the no. of their acid equivs.; the N/P ratio and the ratio of easily hydrolyzable P to total P were the same for the 2 forms. A ADP isomerase was required together with myosin to obtain one, though not the other, of these forms. A further protin was required for the dephosphorylation of ADP; greater activity was obtained with actomyosin than with myosin, but the reaction with the latter was activated by Ca^{++}, that with the former inhibited. A protin involved in the deamination of ADP was also found; it was very similar to or possibly identical with the ADP dephosphorylation protin. The prepn. of these protins was described. 42 references. Erich Hirschberg

HUNGARY

BANGA, Ilona, MAYLATH-PALAGYI, Jolanda, JOBBAGY, Aladar; Medical University of Budapest, I. Institute of Pathological Anatomy and Experimental Cancer Research (Budapesti Orvostudomanyi Egyetem, I. sz. Korbonctani es Kiserleti Rakkutato Intezet), and National Institute of Dermatology and Venereology (Orszagos Bor- es Nemikortani Intezet), Budapest.

"Relationship Between Fluorescent Substances and Arteriosclerosis."

Budapest, Acta Physiologica Academiae Scientiarum Hungaricae, Vol XXX, No 1, 1966, pages 79-89.

Abstract: [English article, authors' English summary modified] a) Specific fluorescence was studied in the collagen and elastin fractions of normal and sclerotic human aortas. Measurements were made at 365 mμ with a Hilger spectrophotometer and appropriate adapter. The specific fluorescence of sclerotic aortas was considerably higher than that of normal aortas. b) Fluorescence of the protein of sclerotic aortas was increased two-fold in the collagen fraction and four-fold in the elastin fraction. When elastin was separated into two subfractions, the one better soluble with elastase was found to contain seven times as much fluorescent material as the normal aortic wall. The elastase-resistant fraction showed a three-fold elevation. c) Study of the relationship between extent of arteriosclerosis and fluorescence revealed that both total flucrescence and that of individual fractions showed a sudden increase at the time of appearance of the sclerosis without further elevation which would have been proportional to the degree of sclerosis later. 1 Hungarian, 12 Western references. [Manuscript received 10 Jun 65.]

1/1

HUNGARY

BANGA, Ilona, MAYLATH-PALAGYI, Jolanda, JOBBAGY, Aladar; Medical University of Budapest, Institute of I. Pathological Anatomy and Experimental Cancer Research (Budapesti Orvostudomanyi Egyetem, I. Korbonctani es Kiserleti Rakkutato Intezet), and National Institute of Dermatology and Venereology (Orszagos Bor- es Nemikortani Intezet), Budapest.

"Study of the Fluorescent Material of Sclerotic Human Aortic Walls."

Budapest, Kiserletes Orvostudomany, Vol XVIII, No 2, Apr 66, pages 189-197.

Abstract: [Authors' Hungarian summary] The specific fluorescence of the collagen and elastin fractions of the aortic wall of normal (child and young adult) and arteriosclerotic humans was compared. The measurements were made with the adapter of a Hilger spectrophotometer using 365 mμ exciting filter. It was found that, in comparison with the normal aorta, there was a large increase in fluorescence values in the arteriosclerotic ones. The mean deviation was two-fold in the collagen fraction and four-fold in the elastin fraction. In the two separated fractions of elastin, the fluorescence values of the highly elastase-soluble fraction were seven-fold, those of the more resistant fraction were about three-fold in comparison to the normal aorta. The study of the correlation between the degree of arteriosclerosis and the fluorescence indicated that the total fluorescence as well as the fluorescence of individual fractions increases steeply and rapidly with the appearance of arteriosclerosis. With increasing severity of the sclerosis, there is no proportional further increase in fluorescence. 1 Hungarian, 13 Western

2447 Banga I., Ouba F. and Szent-Gyorgyi A.
Institute of Biochemistry, University of Budapest Nature of Myosin Nature 1947, 159/4032 (194)

Myosin is a complex system of substances, although it behaves as a homogeneous substance on recrystallization. It consists of a skeleton to which numerous protein-like substances, known as 'protins' are adsorbed. These protins are involved in various reactions of myosin and have been named accordingly. They can be removed from the skeletal substance which appears to denature. On re-adsorption of the protins reactivation occurs. Not only does this skeletal substance adsorb protins, but also different anions, cations, adenosine triphosphate and other substances. Only the full system is capable of enzymic reaction and contraction, each part being by itself inactive. Finch - Birmingham

Section II Vol 1.1 Jan.-Jun. 48 No. 1--6

BANGA, I. 1948

(Korbonctani es Kiserleti Rakkutato Intezetenek Kozlemenye)

"Destruction of the Elastic Fibers of Blood Vessels."

Orvosi Hetilap, Budapest 1948, 89 (465-469)
Abst: Exc. Med. V. Vol. 11, No. 6, p. 440

BANGA, I. 1949

(Dept. of Pathol. Anat. & Experimental Cancer Res. U. of Budapest)

"Enzymic Activity of the Aorta. Adenylpyrophosphatase of the Aorta."

Zeit. fur Vitamin-, Hormon-und Fermentforsching
1948/1949, 2/1-2(1-10)
Abst: Exc. Med. 11, Vol. 111, No. 3, p. 277

C. A.

11A

– **An ingredient of blood serum inhibiting the effect of pancreas extracts dissolving elastin.** József Bakó and Dóra Banga. *Orvosi Hetilap* 90, 45 9(1949); cf. C.A. 44, 10807h. Pancreas ext. of strong elastinolytic effect was intravenously injected in rabbits each 2nd day for 60 days. No signs of any dissolving effects on the elastin fibers of arteries could be detected. Similar neg. results were obtained if the rabbits had previously received for 3–4 months subcutaneous injections of elastin prepd. from human aorta. The elastinolytic action of a pancreas ext. prepd. with physiol. NaCl was inhibited by human rabbit serum. A quant. correlation could be observed between the amt. of inhibiting factor present in the serum of a healthy man and of the elastinolytic enzyme in the ext. of his pancreas. The inhibiting substance could not be dialyzed. The elastinolytic enzyme of pancreas could be inactivated by a simple heating whereas the inhibiting factor of serum was inactivated after keeping at 50° for 30 min. The serum of persons with severe arteriosclerosis contained none or very low amts. of the elastinolytic enzyme of pancreas. István Pinály

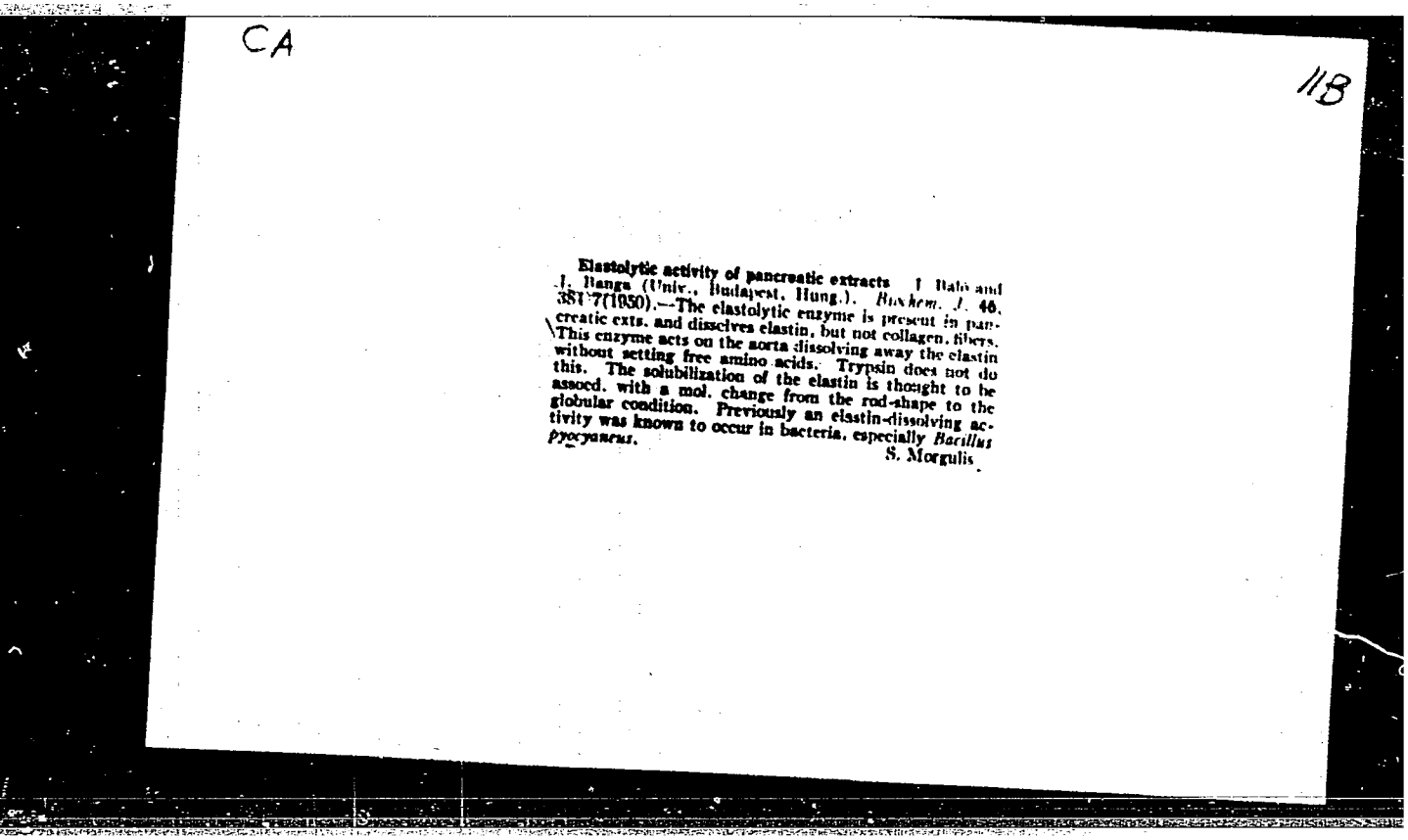
Chemical properties and decomposition by fermentation of the elastic fibers of blood vessel walls. Ilona Banga (Tr. Inv. Budapest). *Kisérlet. Orvostudomány* 1, 117–37(1949).—The media portion of human aorta and aorta femoralis was minced and an aq. suspension prepd. When this suspension was repeatedly washed with EtOH, dried, and powdered, it was storable for years without decompn. The content of H_2O-sol. substances and of substances sol. in physiol. NaCl sols. varied in different aortas; a correlation with age and disease was observed. When extg. aortas of healthy young humans with H_2O 18.8% protein, with Weber soln. 10.9, and with Weber soln. contg. 30% urea 7.6% was extd. (calcd. on a dry basis). These were the max. values for aged and diseased persons were 4.7, 6.2, and 4.0%, resp. The sq. and Weber soln. exts. of aortas of young persons showed a flowing double refraction, proving the presence of fibrous proteins. This birefringence was not observable in exts. of aortas of persons aged more than 35–40 years. Exts. were made with 2% AcOH to investigate whether this protein is collagen or elastin. The AcOH exts. of aorta did not show birefringence. When the Achilles tendon was extd. with 2% AcOH, the ext. showed birefringence, whereas the exts. of Achilles tendon with Weber soln. or with Weber soln. contg. 30% urea showed no birefringence. These results show that the protein extd. from aorta is identical to elastin. Filaments prepd. from the urea ext. of aorta could be drawn, they showed pos. birefringence under the polarizing microscope, and could be stained by resorcin-fuchsin. The birefringence disappeared in the stained elastin threads. Aorta prepns. were decompd. by pepsin and HCl, trypsin, or chymotrypsin in 8–10 hrs. Trypsin and chymotrypsin, however, did not decomp. collagen or elastase prepd. from aorta. Elastin can be decompd. by elastase prepd. from pancreas. By this method it was found that blood vessel walls contain about 30–35% elastin.
Istvan Fiskly

C.A.

11A

Activity of elastase. Ilona Banga and J. Balló (Univ. Budapest). *Kisérletes Orvostudomány* 2, 271–7(1950).—Expts. were done to study the factors influencing the elastolytic activity of exts. prepd. from fresh pancreas, and to det. if pancreas contains elastase partly in a bound, inactive form. The elastase activity was measured by the gravimetric method (cf. *C.A.* **44**, 10007*h*) and expressed in terms of E.U. (elastolytic units, mg. of pure elastin dissolved by an ext. of 1 g. powd. pancreas in 30 min.). When 1 g. pancreas powder was shaken for 30 min. with 10 ml. 0.025 *N* H_2SO_4, 0.025 *N* HCl, acetate buffer of pH 4, acetate buffer of pH 6, phosphate buffer of pH 6, phosphate buffer of pH 8, physiol. NaCl, or H_2O, the liquid centrifuged, and the exts. adjusted to pH 8, the liquids showed 500, 600, 370, 400, 400, 200, 180, and 150 E.U., resp. The apparent differences can be equalized by activating the exts. with acid, by dialysis, or by pptn. with $(NH_4)_2SO_4$. When the physiol. NaCl ext. of pancreas was stored in 0.025 *N* HCl for 10 min. and for 24 hrs., the activity of the liquid increased to 495–615 E.U. Dialyzing the same ext. against tap H_2O for 24–48 hrs. increased the activity to 520–580 E.U. Exts. of originally high activity showed relatively low increases whereas low-activity exts. could be significantly activated by dialysis. Satn. with $(NH_4)_2SO_4$ to 30% and dialysis of the ppt. also produced prepns. with higher activities than the original exts. Activation is explained by assuming the removal of an elastase inhibitor, which can be detected in the exterior liquid of the dialyzing app. This substance could not be sepd. by $(NH_4)_2SO_4$ fractionation. Treatment with acids probably destroys the inhibitor and thus activates elastase.

István Finály



CA

118

Elastolytic activity of pancreatic extracts. I. Bálo and J. Banga (Univ., Budapest, Hung.). *Biochem. J.* 46, 381-7(1950).—The elastolytic enzyme is present in pancreatic exts. and dissolves elastin, but not collagen, fibers. This enzyme acts on the aorta dissolving away the elastin without setting free amino acids. Trypsin does not do this. The solubilization of the elastin is thought to be assocd. with a mol. change from the rod-shape to the globular condition. Previously an elastin-dissolving activity was known to occur in bacteria, especially *Bacillus pyocyaneus*.

S. Morgulis

BANGA, I. 1951

(I Inst. fur. path. Anat. und Exp. Krebsforsch., U. of Budapest)

"Elastase and Arteriosclerosis."

Acta Physiol. (Budapest), 1951 2/1 supple (25-26)
No abst. in Exc. Med.

BANGA, I.; NOWOTNY, A.

Comparative studies about adenosinetriphosphatase activity of human muscles, aorta and arteria femoralis. Acta physiol. hung. 2 no.3-4: 317-325 1951. (CIML 22:1)

1. Of the Medical Chemistry Institute of Budapest University.

BAN A, I.; NOWOTNY, A.

Change of the ATP -ase activity and elastin content of the arterial wall in consequence of arteriosclerosis. Acta physiol. hung. 2 no.3-4:327-331 1951. (CLML 22:1)

1. Of the Institute of Pathological Anatomy and Experimental Cancer Research of Budapest University.

KOKAS, E.; FOLDES, I.; BANGA, I.

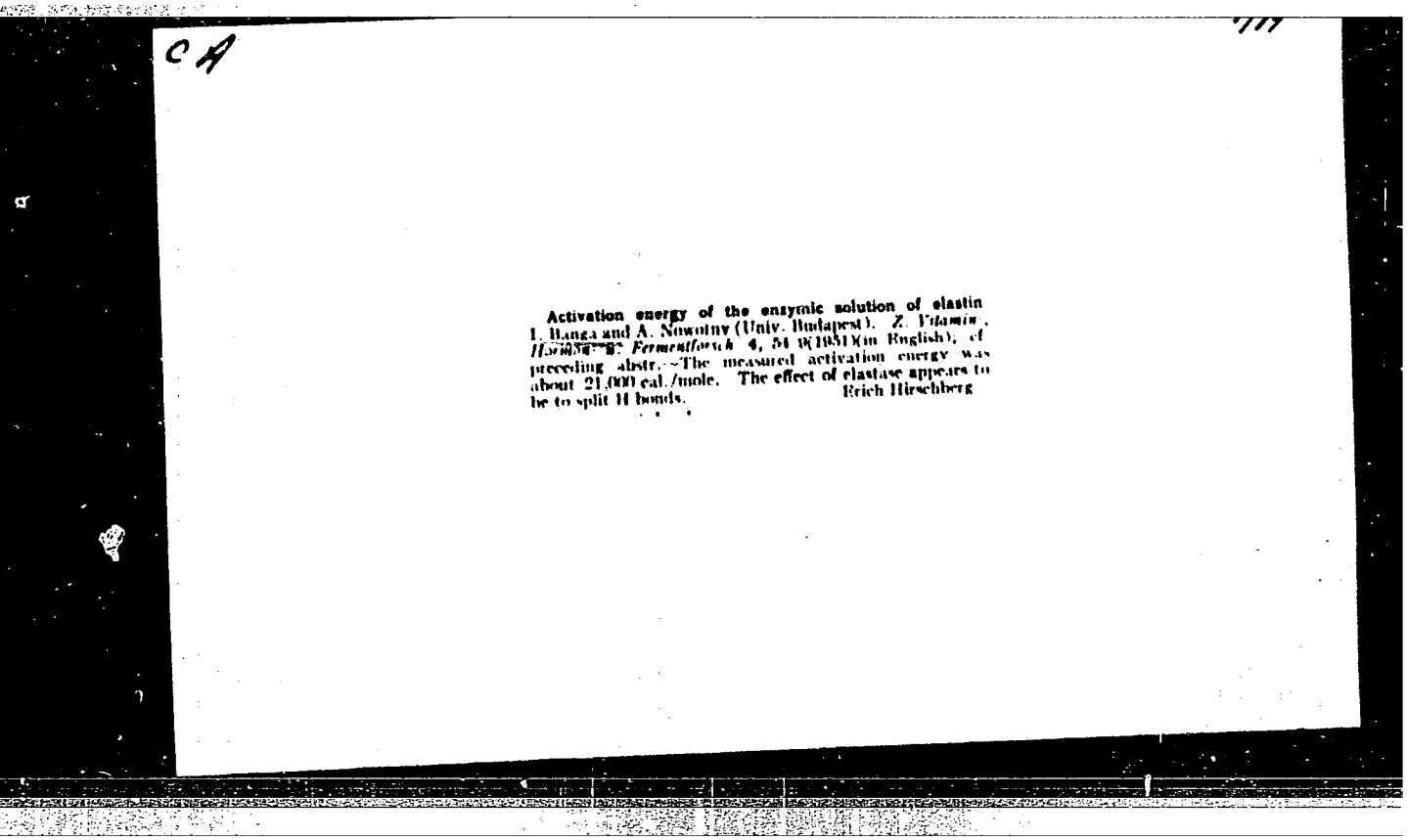
The elastase and trypsin contents of the pancreatic secretion in dogs. Acta physiol. hung. 2 no.3-4:333-341 1951. (CLML 22:1)

1. Of the Institute of Pathological Anatomy and Experimental Cancer Research and Institute of Physiology, all of Budapest University.

CA

11A

Mechanism of the enzymic solution of elastin. I. Banga (Univ. Budapest). *Z. Naturw., Human- u. Tierernährung.* 4, 49–58(1931)(in English); cf. C. I. 44, 10014; following abstr.—Pure elastin was suspended in a 0.01 *N* Na_2CO_3-HCl buffer at pH 10.32 and treated with purified elastase. After 16–24-hr. incubation at 38°, 90–95% of the elastin was dissolved. The yellowish transparent supernatant soln. was exaind. after centrifugation. The soln. had no double refraction. The biuret, xanthoproteic, and Liebermann reactions were pos. No ppt. was obtained with acids, bases, sulfosalicylic acid, K ferrocyanate, 2.5–5% CCl_3COOH, EtOH, and heat. Viscosity was negligible. No digestion by trypsin or chymotrypsin was observed. Elastase caused no measurable liberation of amino acids. Erich Hirschberg



CA

Activation energy of the enzymic solution of elastin. I. Banga and A. Nowotny (Univ. Budapest). *Z. Vitamin-, Hormon- u. Fermentforsch.* 4, 54–8(1951)(in English); cf. preceding abstr.—The measured activation energy was about 21,000 cal./mole. The effect of elastase appears to be to split H bonds.
Erich Hirschberg

1. BANGA, J.
2. USSR (600)
4. Vitamins
7. Influence of vitamin A and C on the development of coccidioidal invasion in rabbits. Latv. PSR Zin. Akad. Vestis No, 7, 1951.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

SZABO, Z.; BANGA, I.

A model experiment on the Un -Pappenheim method of nucleic acid staining. Acta physiol. hung 3 no.2:257-265 1952. (CLML 24:3)

1. Of the Institute of Patho gical Anatomy and Experimental Cancer Research of Budapest Univers y

BANGA, I.

Med

The enzymic breakdown of the structure proteins of the aorta. I. Banga (Univ. Budapest). *Congr. intern. biochim. Résumés communs., 2e Congr., Paris* 1952, 269-70(in English); cf. *C.A.* 46, 1055h.—The elastin and collagen of the aorta-wall seem to differ from elastin and collagen as usually defined. Elastase dissolves 65, papain 14, and trypsin plus chymotrypsin 25% of the structure proteins of the wall of cattle aorta. The collagen extd. with cold AcOH is 20% of the total protein. Elastase dissolves 60% of the total protein. The collagen cannot be dissolved by papain, but 30% of the collagen is dissolved by trypsin plus chymotrypsin. Elastin was prepd. from the aorta by the method of Stein and Miller (I), Banga (II), and Gross (III). I and II were 100% dissolved by elastase, that of III only 65%. Papain did not dissolve I elastin, but dissolved II and III 80 and 47%, resp. Trypsin plus chymotrypsin did not dissolve the I and II elastins, but dissolved the III elastin 27%. Hence, the elastins prepd. by different methods are neither identical nor homogeneous. The protein dissolved from aorta by AcOH is not collagen but a protein complex which can also be dissolved by elastase. In its soln. by elastase, SH groups are liberated.

W. C. Tobie

BANGA, I.

Isolation and crystallisation of elastase from the pancr as of cattle. Acta physiol. hung. 3 no.2:317-324 1952. (CLML 2 3)

1. Of the Institute of Pathological Anatomy and Experimental Cancer Research of Budapest University.

BANGA, I

Banga, I.; Feuer, Gy.; Wollemann, M.

"The Enzymatic Breakdown of Variously Prepared Elastins." p. 32 (Acta Physiologica. Supplement to v. 4, 1953, Budapest.)

SO: Monthly List of East European Accessions, Vol. 3, No. 6, Library of Congress, June. 1954, Uncl.

BANGA, I.;SCHULLER, D.

Contributions to the structure of elastin with special reference to the action of elastase. Acta physiol. hung. 4 no.1-2:13-24 1953. (CLML 25:1)

1. Of the Department of Pathological Anatomy and Experimental Cancer Research of Budapest University.

BALO, J.;BANGA, I.

Change in the elastase content of the pancreas in relation to arteriosclerosis. Acta physiol. hung. 4 no.1-2:187-194 1953. (CLML 25:1)

1. Of the Department of Pathological Anatomy and Experimental Cancer Research Institute of Budapest University.

BALO, J.; BANGA, I.; SCHULER, D.

Comparative studies on elastolysis of the vascular wall and ligamentum nuchae in histological slices. Acta morph. hung. 4 no.2:141-148 1954.

1. Institut für Pathologische Anatomie und Experimentelle Krebsforschung der Medizinischen Universität, Budapest (Vorstand Prof. dr. J.Balo)

(ARTERIES, CAROTID
elastolysis, comparison with ligamentum nuchae, histol.)
(LIGAMENTS
ligamentum nuchae, elastolysis, comparison with carotid artery, histol.)

BANGA, I.

László (Med. Univ., Budapest). *Acta Physiol. Acad. Sci. Hung.* 5, 1–6(1954)(in English); *cf. C.A.* 46, 1058c.—Elastase inhibitor (I) was detd by its inhibition of elastase activity (*C.A.* 47, 7918h) and given in terms of ml. soln

and, from the 60th to the 100th day, 85 ml. of 1% NH_4OH. An increase in the cholesterol (II) content of the serum was usually accompanied by a decrease in I. The mean increase in II was from 125 to 135 mg. %, and I decreased to

BANGA I.
(2493)

Dept. of path. Anat. and exp. Cancer Res., med Univ., Budapest.* The effect of substances influencing oxidoreduction on the growth of mouse cancer ACTA PHYSIOL. ACAD. SCIENT. HUNG. (Budapest) 1954, 5/1-2 (273-291) Tables 14. The investigations are based on the conclusion that in tumours one or more steps in the Krebs cycle are deficient. The possibility was tested that tumour growth might be inhibited by remedying this deficiency with auto-oxidable metal complexes. Such compounds were administered to mice bearing Ehrlich's mouse carcinoma. Some increased, whilst others retarded the neoplastic growth. The most conspicuous stimulator of growth was Fe-ascorbic acid complex; the most effective inhibitor Cd-ascorbic acid complex. In Warburg experiments paraphenylenediamine oxidation of the mouse cancer is inhibited by Fe-complex while stimulated by Cd-ascorbic acid complex. Experiments performed in vitro with muscle suspensions demonstrated that the Fe-complex inhibited the activity of the respiratory ferment (cytochrome oxidase), while the Cd-complex accelerated the reduction of the quinone formed. The conclusion is drawn that both complexes act on the respiratory ferment, in one case inhibiting, in the other intensifying its action. A tumour growth inhibiting activity similar to that of Cd-complex is displayed by some Mn-complexes. From among the Mn-ascorbic acid, Mn-malate and Mn-citrate complexes, Mn-malate has proved the most active. The toxicity of Mn-malate being considerably lower than that of the Cd-complex, the compound might eventually be used in therapy. O'Connor - London (7,16)

SO: EXCERPTA MEDICA, VOL. 7 No. 8, SECTION V, AUGUST 1954

BANGA, I.

3403. **Elastolysis of elastin and of collagen.** I. Banga and J. Baló *Acta physiol. Acad. Sci. hung.*, 1954, 6, 235—252 (1st Inst. of Pathol. Anat. and Exp. Cancer Res., Med. Univ., Budapest, Hungary).— The conditions of rendering collagen soluble by elastase, properties of the lytic products, nature and structure of natural collagen (tendon of Achilles) and elastin (nuchal ligament) were studied. A carbohydrate and carboxyl group containing substance (presumably a mucoprotein) is split off from collagen when it is rendered soluble by elastase. Elastase acts on the thus liberated active groups. There is an inverse correlation between swelling capacity and elastase solubility of collagen. Analyses of products of elastolysis, of purified elastin and nuchal ligament showed that both elastic and collagen fibres are complex structures. One of their common components is a mucoprotein. Lytic products of both elastin and collagen contain iodine- and bromine-reducing linkages. These are not specific to lysates. They appear where ever non-precipitable proteins of small mol. weight are present. These linkages differ from amino acids which are oxidised by hypoiodide and hypobromide with N liberation. A. B. L. Bernák.

Banga I.

4930. Contraction and relaxation of collagen fibres. I. Banga, J. Balo, and D. Szabo *Nature, Lond.*, 1954, 174, 788–789 (First Dept. of Pathol. Anatomy and Exp. Cancer Res., Univ. of Budapest). —The contraction and relaxation of isolated collagen fibres of rat tail tendon in distilled H_2O at temp. >60° and in various salt soln. at room temp. were studied by polarisation microscopy and by chemical (dissolution of the protein) and enzymic (elastase) methods. It appears that collagen has 2 different protein components, neither of which is a chondromucoid. The chondroitin sulphate of the ground substance plays no part in the process of contraction and relaxation.

I. B. Parr.

(2)

Change in velocity of elastolysis of blood vessels due to arteriosclerosis. J. Baló and I. Banga (Univ. Budapest). *Congr. intern. hist. s., Résumés communs., 3e Congr., Bruxelles* 1955, 120(in English).—A previous paper (cf. *C.A.* 49, 8337h) is extended. The elastic fibers from human carotid or aorta sections of young persons dissolved only very slowly in pure elastase soln. Proportional to increasing age, the rate of elastolysis increases. Arteriosclerotic blood vessels dissolved much more rapidly than normal ones. No quant. details are given. W. C. Tobie

BANGA, I.

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Med

8459. Action of purine nucleotides on nucleic acid content of heart during exercise. I. Banga, E. Kokas, I. Miczbán, and I. Tóró *Acta physiol. Acad. Sci. hung.*, 1955, 7, 401—407 (Inst. of Histology and Embryology, Medical Univ., Budapest, Hungary).—160 240 g. rats were loaded with lead wt. and made to swim in 4 groups. Each group was injected with one of the following, saline, Corhormone (trade name of an embryonic heart extract), ATP, or GAD a guanylic acid nucleotide isolated as Na salt from Corhormone, (Kokas and Banga, *ibid.*, 1950, Suppl. 1, 24). Swimming took place daily for 10—16 and 17—25 days and the total nucleic acid, RNA, and DNA content of their hearts determined. The 2 latter determinations gave variable results. Total nucleic acid diminished during exercise in the saline group. The diminution was proportional to the severity of the exercise. The nucleic acid content increased or in strenuous overwork returned to normal in the groups injected with the other 3 substances. In the hearts of these latter groups great number of nuclei appeared of the type of young animals.

A. B. L. Beznák.

BANGA, I.

HUNGARY / Human and Animal Morphology (Normal and Pathological). S
Skeleton.

Abs Jour : Ref Zhur - Biol., No 21, 1958, No 97128

Author : Banga, I.; Balo, J.; Szabo, D.
Inst : Hungarian Academy
Title : Study of Appearances of Contractions and Dilatation of the Submicroscopical Structure of Collagenous Fibers.

Orig Pub : Magyar tud. akad, Biol. es orv. tud. oszt. kozl., 1956, 7, No. 4, 394-403

Abstract : Collagen consists of two chemically firmly bound components, procollagen and metacollagen. These components are preserved by contractions, and this process should be considered as a reversible reaction. By dilation, procollagen is washed out of collagenous fibers, and the remaining part of collagen consists of metacollagen. Under influence of heat, metacollagen

Card 1/2

HUNGARY / Human and Animal Morphology (Normal and Pathological). S
Skeleton.

Abs Jour : Ref Zhur - Biol., No 21, 1958, No 97128

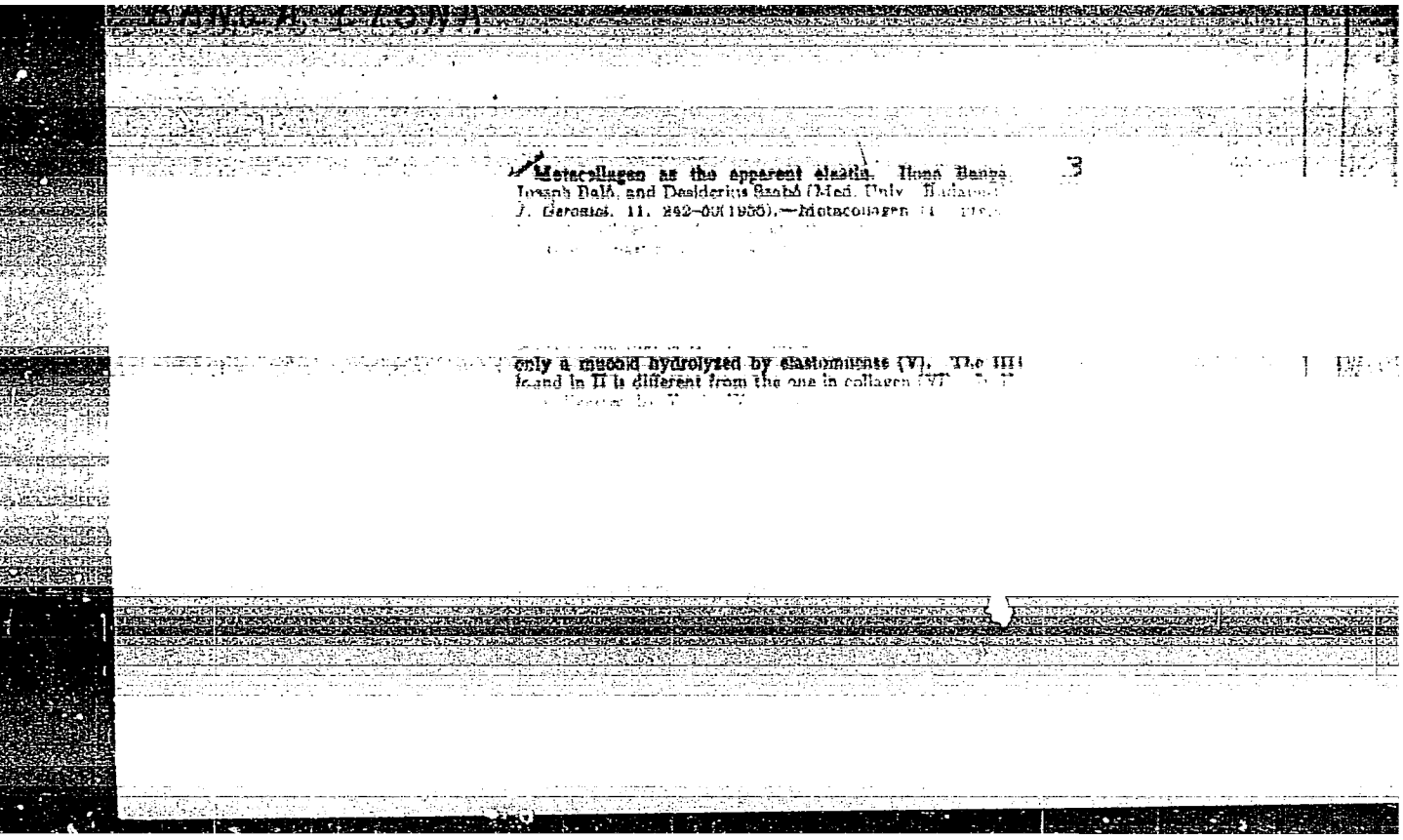
is capable of contractions, and only wrinkles. The connection of procollagen with metacollagen is collagenous fibers is similar to the interrelation of actin and myosin in the process of muscle-fiber contractions.

Card 2/2

BANGA, I.

5756. **Procollagen as a component of collagen fibres.** I. Banga, J. Baló, and D. Szabó *Acta physiol. Acad. Sci. hung.*, 1958, 9, 61—72 (1st Dept. of Pathol. Anat. and Exp. Cancer Res. Inst., Med. Univ., Budapest, Hungary).—To decide the question whether procollagen is a precursor or a component part of collagen the chemical composition of native collagen fibres (and not skin extracts) was studied. The native collagen fibres were obtained from rat tendon and mouse tail, they were histochemically, physico-chemically, and functionally a unit. Procollagen could be extracted and obtained in a crystalline form from these native collagen fibres. The identity of this protein with Orekhovich's procollagen is proved. Native collagen fibres anisodiametrically contract at 67°, their residual collagen (after the extraction of procollagen—which is 25%) does not contract but shrinks (syneresis) at 55°. This protein is termed metacollagen. Whereas metacollagen shows excessive neutral swelling, the native collagen fibre swells only slightly. It is concluded that collagen is a functional protein unit built up by 2 components pro- and meta-collagen held together by chemical linkages. (Hungarian)

A. B. L. Bernák.



Metacollagen as the apparent elastin. Ilona Banga, Joseph Balló, and Desiderius Szabó (Med. Univ. Budapest). *J. Gerontol.* 11, 242–60 (1956).—Metacollagen [illegible]

only a mucoid hydrolyzed by chymotrypsin (V). The III [illegible] found in II is different from the one in collagen (VI).