ROKHLIN, V.A.

62

Rohlin, V. A. A three-dimensional manifold is the boundary of a four-dimensional one. Doklady Akad. Nauk SSSR (N.S.) 81, 355–357 (1951). (Russian)

The author sketches a proof that a compact, connected, orientable 3-manifold M^3 is homeomorphic to the boundary of some orientable 4-manifold M^4. (Manifolds and homeomorphisms are assumed to be "smooth," where "smooth" is not defined.) The indicated proof proceeds in three steps. (1) By a modification of an old construction due to Kneser, the proposition is correct if M^3 can be imbedded in 5-dimensional euclidean space R^5. Two operations O_1 and O_2 are defined: $O_1(M^3)$ is obtained from M^3 by boring out a tube and identifying the points of the bounding torus in pairs to make a Klein bottle, $O_2(M^3)$ is obtained from M^3 by boring out two tubes and matching the boundary tori with each other. Then (2) M^3 must bound if $O_i(M^3)$ does. Finally (3) an arbitrary M^3 may be transformed by a finite sequence of operations O_i into an M_1^3 that can be imbedded in R^5. It is stated that any compact, 3-manifold, orientable or not, is the boundary of some 4-manifold. (The announced results have been recently obtained also by R. Thom [Colloque de Topologie, Strassbourg, 1951, no. V] using a different method. Thom's paper also includes the generalization of (1) to higher dimensions.) *R. H. Fox* (Princeton, N. J.).

ROKHLIN, V. A.

231T69

USSR/Mathematics - Non-Euclidean Geometry 11 May 52

"New Results of the Theory of Four-Dimensional Manifolds," V. A. Rokhlin

"Dok Ak Nauk SSSR" Vol 84, No 2, pp 221-224

Rokhlin states that every oriented closed surface can serve as the boundary of an oriented 3-dimensional manifold. Author states that he showed earlier that every oriented closed 3-dimensional manifold can serve as the boundary of an oriented 4-dimensional manifold. States that, for the

231T69

4-dimensional manifold, a similar theorem is not true; e.g., a complex projective plane cannot be oriented. Gives the homological condition necessary and sufficient for an oriented closed 5-dimentional manifold. Submitted by Acad A. N. Kolmogorov 14 Mar 52.

231T69

USSR/Mathematics - Topology, Cycles 21 May 52

"Intrinsic Definition of Characteristic Cycles of Pontryagin," V. A. Rokhlin

"Dok Ak Nauk SSSR" Vol LXXXIV, No 3, pp 449-452

Pontryagin [Pontrjagin] gave 2 equiv definitions of characteristic cycles of a smooth oriented closed manifold: in the 1st characteristic cycles of manifold Mk arise as homological invariants of tangential reflection of this manifold in manifold H(k,l) of oriented k-dimensional subspaces of vector space Rk+l; in the 2d, the characteristic cycles are cycles of singularities of systems of vector fields given in Mk.

225T51

In the current article the author gives a simpler and more effective intrinsic formulation, following E. Stiefel and H. Whitney. Submitted by Acad A. N. Kolmogorov 14 Mar 52.

225T51

ROKHLIN, V. A.

259T60

USSR/Mathematics - Interior Homologies 11 Apr 53

"Interior Homologies," V. A. Rokhlin, Arkhangel'sk Forestry Eng Inst im Kuybyshev

DAN SSSR, Vol 89, No 5, pp 789-792

An investigation continuing previous works of the author (DAN SSSR, Vol 81, 35 (1951); Vol 84, 221 (1952)). Author shows that every oriented closed 3-dimensional manifold can serve as the boundary of an oriented 4-dimensional manifold and gives the homologic conditions necessary and sufficient for an oriented closed 4-dimensional manifold to be

259T60

able to serve as the boundary of an oriented 5-dimensional manifold. (See S. Chern, Ann of Math, Vol 49, 362 (1948).) Presented by Acad A. N. Kolmogorov 18 Feb 53.

ROKHLIN, V A

SUBJECT USSR/MATHEMATICS/Theory of functions CARD 1/2 PG - 830
AUTHOR ROCHLIN V.A.
TITLE Metrical classification of measurable functions.
PERIODICAL Uspechi mat.Nauk 12, 2, 169-174 (1957)
reviewed 6/1957

Let f and f' be real functions being defined in Lebesgue spaces M and M' (a Lebesgue space is a space being isomorphic to a line with a Lebesgue measure; compare also Rochlin, Mat.Sbornik,n.Ser. 25, 1, 107-150 (1949)). Let f and f' be of a metric type if there exists an isomorphic mapping T of M onto M' and a set $N \subset M$ of measure zero such that $f'(T(x)) = f(x)$ for all $x \in M-N$. Now the following metric invariants are introduced:
1) Let μ be the measure of M, then let $F_f = F_f(z) = \mu X_z$, where X_z is the set of all $x \in M$ in which $f(x) < z$. Let further Σ_n be the totality of those measurable sets $A \subset M$ on which f assumes each of its values not more than n times. Then let $F_{f,n}(z)$ be the upper bound of the measures of all sets $A \in \Sigma_n$ which lie in X_z. The introduced functions have the following properties:
A) F is a non-decreasing function which is defined on the whole straight line and which is continuous from the left side. We have

$$\lim_{z\to-\infty} F(z) = 0, \qquad \lim_{z\to+\infty} F(z) = 1.$$

B) F_n are non-decreasing functions which are defined on the whole straight line and which are continuous from the left side. We have

$$\overline{F}_n(\Delta) \;\overline{F}(\Delta), \quad \overline{F}_n(\Delta) \;\overline{F}_{n+1}(\Delta), \qquad (n=1,2,\ldots)$$

$$\overline{F}_{n+1}(\Delta)-\overline{F}_n(\Delta) \;\overline{F}_n(\Delta)-\overline{F}_{n-1}(\Delta), \quad \overline{F}_0(\Delta) = 0,$$

where $\Delta = [a,b)$ and $\overline{F}(\Delta) = F(b)-F(a)$.
The following theorem of classification is proved: Two measurable functions f and f' being defined on Lebesgue spaces belong to the same metric type then and only then if

$$F_f = F_{f'} \quad \text{and} \quad F_{f,n} = F_{f',n} \qquad (n=1,2,3,\ldots).$$

The functions $F = F_f$ and $F_n = F_{f,n}$ $(n=1,2,3,\ldots)$ have the properties A) and B). For every system of functions F, F_n with the properties A) and B) there exists a function f being defined on a Lebesgue space such that

$$F_f = F \quad \text{and} \quad F_{f,n} = F_n \qquad (n=1,2,\ldots).$$

AUTHOR ROKHLIN V.A. PA - 3009

TITLE On Pontryagin Characteristic Classes.
(O kharakteristicheskikh klassakh Pontryagina, -Russian)

PERIODICAL Doklady Akademii Nauk SSSR,1957, Vol 113, Nr 2, pp 276-279 (U.S.S.R.)
Received 6/1957 Reviewed 6/1957

ABSTRACT Primarily the status of the problem is shown and the competent prepublications are quoted. The main result of the present paper lies in the fact that the class $S_{4k}(M^n)$ is topologically invariable, even in the case of $n = 4k + 1$. Especially PONTRYAGIN's class $p_4(M^5)$ of the five-dimensional manifold M^5 (described in detail in the text) is topologically invariable. But this class can not be expressed by the invariables of the circle of the V-homologies of the manifolds M^5.
Then follows the demonstration of the topological invariance of the class $S_{4k}(M^{n-k+1})$. M^{n-k+1} and M_1^{n-k+1} here are to denote plain, compact, orientable manifolds, which are identical as topological manifolds. It has to be proved here that $S_{4k}(M^{n-k+1})$ is regarded equal to $S_{4k}(M_1^{n-k+1})$. For this purpose it is shown that the scalar products $(S_{4k}(M^{n-k+1}), u^{n-k})$ and $(S_{4k}(M_1^{n-k+1}), u^{n-k})$ are identical. As is known, it is possible to transfer the definition of the characteristical V-classes of PONTRYAGIN on non-orientable manifolds. The transition to orientable two-layer superpositions demonstrates that the classes $S_{4k}(M^{n-k+1})$ here remain topologically invariable.
If $n > 4$ the class $p_4(M^n)$ is not defined by the circle of the V-homolo-

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On Pontryagin Characteristic Classes. PA - 3009

gies of the manifold M^n. Finally some properties of the classes S_{4k} (M^{4k+1}) are defined.
Without illustrations.)

ASSOCIATION National Educational Institute IVANOVO
PRESENTED BY KOLMOGOROV A.N., Member of the Academy
SUBMITTED 26.9.1956
AVAILABLE Library of Congress
Card 2/2

ROKHLIN, V.A.; SHVARTS, A.S.

The combinatorial invariance of Pontriagin classes. Dokl. AN SSSR 114 no.3:490-493 My '57. (MLRA 10:8)

1. Ivanovskiy gosudarstvennyy pedagogicheskiy institut. Predstavlen akademikom P.S. Aleksandrovym.
(Topology)

20-114-3-11/60

AUTHORS: Rokhlin, V. A., Shvarts, A. S.

TITLE: On the Combinatorial Invariance of the Pontryagin Classes (O kombinatornoy invariantnosti klassov Pontryagina)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr 3, pp. 490-493 (USSR)

ABSTRACT: The present paper proves the combinatorial invariance of the reduced Pontryagin-classes p_{4k}, i.e. the characteristic Pontryagin-classes which may be considered as classes of the weak ∇-homologies. The present paper is closely connected with the paper by V. A. Rokhlin, Doklady Akademii Nauk SSSR, 1957, Vol. 113, Nr 2. When φ is a continuous representation, the corresponding homomorphisms of the groups of the ∇- and Δ-homologies are designated by φ^* and φ_*. Main theorem: Let M_o^n, M_1^n be smooth closed manifolds with the isomorphous C^1-triangulations K_o and K_1 and $\varphi: M_o^n - M_n^n$ be an isomorphous representation which may be defined by a certain isomorphism between K_o and K_1. Then $\varphi^*(p_{4k}(M_1^n)) = p_{4k}(M_o^n)$ $(k=1,2,\ldots)$

Card 1/3

On the Combinatorial Invariance of the Pontryagin Classes

applies. From this the following corollary arises: When the smooth closed orientable manifolds M_0^{41}, M_1^{41} have isomorphous C^1-triangulations, at a suitable orientation they have equal Pontryagin-numbers. From the main theorem follows: When the main hypothesis of the combinatorial topology is correct, the Pontryagin-numbers are topologically invariant. When the stronger main hypothesis is correct, the reduced Pontryagin--classes are topologically invariant. Then two lemmata are given and proved, and after those the proof of the main theorem is given. Finally the authors examine the manifolds B_k^8 and X_k^8 constructed by Milnor. L_k^8 be the triangulation of the second manifold obtained from a certain C^1-triangulation of the first manifold. L_k^8 is a formal manifold. Then the following theorem is proved: At $k \not\equiv 1 \pmod 7$ the closed orientable manifold L_k^8 does not permit any smoothness and besides it is not internally homologuous to the smooth manifold. The following corollary is obtained: When the main hypothesis of the combinatorial topology is the case, no smoothness can be introduced into the topological mainfold X_k^8. There are 8 references, 2 of which are Soviet and 6 French.

Card 2/3

20-114-3-11/60

On the Combinatorial Invariance of the Pontryagin-Classes

ASSOCIATION: State Pedagogical Institute, Ivanovo (Ivanovskiy gosudarstvennyy pedagogicheskiy institut)

PRESENTED: February 2, 1957, by P. S. Aleksandrov, Member of the Academy

SUBMITTED: January 30, 1957

Card 3/3

ROKHLIN, V.A.

Generators in ergodic theory. Vest. LGU 20 no.13:68-72 '65. (MIRA 18:7)

ROKHLIN, V.A.

Imbedding of nonorientable three-dimensional manifolds in a five-dimensional Euclidean space. Dokl. AN SSSR 160 no.3: 549-551 Ja '65. (MIRA 18:3)

1. Submitted July 14, 1964.

ROKHLIN, V.A.

New examples of four-dimensional manifolds. Dokl. AN SSSR nc.2:
273-276 My '65. (MIRA 18:5)

1. Leningradskiy gosudarstvennyy universitet im. A.[illegible]ova.
Submitted November 27, 1964.

[redacted], V.A.

Metric properties of the endomorphisms of compact commutative groups. Izv. AN SSSR. Ser. mat. 28 no. 4:867-874 Jl-Ag '64. (MIRA 17:9)

ROKHLIN, V. A.

Generatrices in ergodic theory. Vest. LGU 18 no.1:26-32 '63.
(MIRA 16:1)

(Spaces, Generalized) (Entropy)

ROKHLIN, V.A.

Axiomatic determination of the entropy of a transformation with an invariant measure. Dokl.AN SSSR 148 no.4:779-781 F '63. (MIRA 16:4)

1. Predstavleno akademikom A.N.Kolmogorovym.
(Transformations (Mathematics)) (Entropy)

ROHLIN, V.A. [Rokhlin, V.A.]; ARATO, Matyas [translator]

New development in the theory of moderate projections. Mat kozl MTA 12 no.4:339-360 '62.

ABRAMOV, L.M.; ROKHLIN, V.A.

Entropy of the skew product of transformations with an invariant measure. Vest.LGU 17 no.7:5-13 '62. (MIRA 15:5)
(Transformations (Mathematics)) (Topology)

ROKHLIN, V.A.; SINAY, Ya.G.

Construction and properties of invariant measurable divisions.
Dokl. AN SSSR 141 no.5:1038-1041 D '61. (MIRA 14:12)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
Predstavleno akademikom A.N. Kolmogorovym.
(Transformations (Mathematics))
(Differential invariants)

ROKHLIN, V.A.

Exact endomorphisms of Lebesgue space. Izv.AN SSSR.Ser.mat. 25 no.4:499-530 Jl-Ag '61. (MIRA 14:7)
(Spaces, Generalized)

ROKHLIN, V.A.

New progress in the theory of transformations with invariant measure. Usp. mat. nauk 15 no.4:3-26 Jl-Ag '60. (MIRA 13:9)

(Transformations (Mathematics))

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AUTHOR: Rokhlin, V.A.

TITLE: New Progress in the Theory of Transformations With Invariant Measure

PERIODICAL: Uspekhi matematicheskikh nauk, 1960, Vol.15, No.4, pp.3-26

TEXT: The paper originated in the author's lectures at the Conference on Functional Analysis (September 30, 1959) in Baku and in the Moscow Mathematical Society (November 17, 1959). The author gives a survey on the modern, chiefly Soviet results of the ergodic theory, especially such which have been treated in the author's seminar on the metric theory of dynamic systems at the Moscow University. All papers mentioned in the survey are already published.
The starting point of the development were the results of Kolmogorov (Ref.1,2) obtained with the aid of the theory of information, where the notion of the entropy of a transformation was introduced. A somewhat changed useful definition of the notion of the entropy of the automorphism T is due to Ya.G.Sinay (Ref.11). Then the properties of the entropy were investigated by Sinay (Ref.11), Abramov (Ref.9,12) and Rokhlin (Ref.13). Theorems which admit a calculation of the entropy are due to the same authors (Ref.13,14,15). Automorphisms with a zero-entropy and connections between entropy and spectrum were also treated by the author (Ref.13) and

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New Progress in the Theory of Transformations With Invariant Measure

in (Ref.9). Beside of the automorphisms of Kolmogorov (Ref.1) and M.S. Pinsker(Ref.17), in (Ref.16) the author investigated the strong endomorphisms. In some papers the different flows (quasiregular (Ref.1), geodesic (Ref.21,22,23,24)) and their entropy was considered.
Finally the author formulates a large number of new problems, e.g.: Has every ergodic automorphism a generator ? Is every factor-automorphism of a Kolmogorov (= quasiregular) automorphism a Kolmogorov automorphism itself? Is the ergodic automorphism of a compact commutative group a Kolmogorov automorphism? Has it a positive entropy? Has every flow with a positive entropy in its spectrum a countable multiple Lebesgue component? The author mentions Gel'fand, Formin, L.D.Meshalkin and I.V.Girsanov. There are 25 references: 20 Soviet, 2 German, 1 Japanese, 1 Polish and 1 American.

SUBMITTED: March 21, 1960

Card 2/2

16(1)
AUTHOR: Rokhlin, V.A. SOV/42-14-4-1/27

TITLE: The Theory of Inner Homologies

PERIODICAL: Uspekhi matematicheskikh nauk, 1959, Vol 14,Nr 4,pp 3-20 (USSR)

ABSTRACT: The present paper is a representation of the lecture given by the author in the Moscow Mathematical Society on December 2,1958. 1. Terminology; 2. older results; 3. characteristic classes of Stiefel-Whitney and Pontryagin; 4. Pontryagin's theorems; 5. three- and four-dimensional manifolds. The groups $\partial\pi^n$ and Q^n; 6. and 7. results of Thom; 8. modern papers of the author [Ref 17,22]; 9. papers of Averbukh [Ref 24], Dold [Ref 20], Adachi [Ref 25]; 10. enumeration of some unsolved problems. The application of the theory of inner homologies is not mentioned in the present paper.
There are 28 references, 11 of which are Soviet, 5 American, 4 French, 1 Indian, 1 Chinese, 3 German, 1 Japanese, and 2 Swiss.

SUBMITTED: February 9, 1959

Card 1/1

ROKHLIN, V.A.

Entropy of metric automorphism. Dokl. AN SSSR 124 no.5:980-983 F '59. (MIRA 12:3)

1.Kolomenskiy pedagogicheskiy institut. Predstavleno akademikom A.N. Kolmogorovym.
(Functional analysis)

16(1) SOV/20-124-5-5/62

AUTHOR: Rokhlin, V.A.

TITLE: On the Entropy of Metric Automorphisms (Ob entropii metricheskogo avtomorfizma)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 5, pp 980-983 (USSR)

ABSTRACT: The author uses the following notations: M is a Lebesgue space with the measure μ, $\mathfrak{S}$ the space of its measurable subsets, $\mathfrak{G}$ the set of its automorphisms. In $\mathfrak{S}$ the metric $\varrho(A,B) = \mu(A + B - AB)$ exists, in $\mathfrak{G}$ there are two topologies under which $\mathfrak{G}$ forms the spaces $\mathfrak{G}_s$ and $\mathfrak{G}_d$; ξ the decomposition of M into single points; $\xi \leq \eta$ means that η is a subdecomposition of the decomposition ξ. $H(\xi)$ is the entropy of ξ. A great number of chiefly new properties of the entropy and of the connected notions is given partly with and partly without proof, e.g.: Let Z be the set of decompositions ξ of the space M with $H(\xi) < \infty$. If $\xi_1, \xi_2, \ldots$ is a sequence of decompositions from Z so that $\xi_n \leq \xi_{n+1}$ and

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On the Entropy of Metric Automorphisms SOV/20-124-5-5/62

$\bigvee_{n=1}^{\infty} \xi_n = \varepsilon$, then it is

(1) $\lim_{n\to\infty} h(T, \xi_n) = h(T)$,

where $h(T) = \sup h(T, \xi)$ is the entropy of the automorphism T;

$h(T, \xi) = \lim_{n\to\infty} \frac{1}{n} H(\xi_T^n)$, $\xi_T^n = \bigvee_{k=0}^{n-1} T^k \xi$. It is proved that

$h(T)$ on $\mathfrak{M}_s$ is no function of first class, from which it follows again that the formula (1) defining the entropy of the automorphism by two limit passages principally cannot be simplified. - There are 7 Soviet references.

ASSOCIATION: Kolomenskiy pedagogicheskiy institut (Kolomna Pedagogical Institute)

PRESENTED: November 28, 1958, by A.N. Kolmogorov, Academician

SUBMITTED: November 28, 1958

Card 2/2

AUTHOR: Rokhlin, V.A.

TITLE: Inner Homologies (Vnutrenniye gomologii)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol 119, Nr 5, pp 876-879 (USSR)

ABSTRACT: In an earlier paper [Ref 1] the author has considered the natural homomorphism h^k of the group O^k of the inner homologies in the group $\mathfrak{N}^k$ of the inner homologies mod 2. He has found the kernel of homomorphy of h^k (it was 20^k) and the image $h^k(O^k)$. In the present paper the author uses the modern results on the group $\mathfrak{N}^k$ in order to give a very extended description of $h^k(O^k)$.

Let $[M^k]$ be the element of $\mathfrak{N}^k$ determined by the manifold M^k. Let $\mathfrak{N}$ be the algebra which is represented by the direct sum of all $\mathfrak{N}^k$ with the usual multiplication of the manifolds. To every natural $r \neq 2^{s}-1$ there exists an r-dimensional manifold $[P(r)]$ such that the elements $[P(r)]$ form a system of generators of the algebra $\mathfrak{N}$ being independent mod 2. Thus all possible products $[P(r_1)] \times [P(r_2)] \times \ldots \times [P(r_1)]$ with $r_1+r_2+\ldots+r_1 = k$ form a system of generators of the group $\mathfrak{N}^k$ being independent mod 2. Further, $[M^k_1] = [M^k_2]$ then and only then if M^k_1 and M^k_2 have the same remainde

Card 1/3

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... kind. Let K_4 be the set of the M^k for which

Rokhlin, V.A.

44-1-261

TRANSLATION FROM: Referativnyy zhurnal, Matematika, 1957, Nr 1, p 38 (USSR)

AUTHOR: Rokhlin, V.A.

TITLE: Characteristic Cycles of Smooth Manifolds (Kharakteristichyeskiye tsikly gladkikh mnogoobraziy)

PERIODICAL: Tr. 3-go Vses. matem. s"yezda, 2 Moscow, AN SSSR, 1956, p 55

ABSTRACT: The work of Stieffel, Whitney, Pontryggin, Chern and other authors on the theory of characteristic cycles is mentioned. It is pointed out that the only complete result on the invariance of the characteristic cycles of Pontryagin (invariance of the characteristic number of the 4th dimension oriented closed manifold) belong to the author and to Thom.

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ROKHLIN, E. M.

6

Synthesis of phenyl-substituted 4-(3-indolyl)butyric acids. N. N. Suvorov, V. K. Antonov, and E. M. Rokhlin. D. I. Mendeleev Chem.-Technol. Inst., Moscow. *Doklady Akad. Nauk S.S.S.R.* 91, 1345–8(1953); cf. *C.A.* 47, 3294d. Several phenylindolylbutyric acids were prepd. for tests as plant-growth stimulators. $EtO_2C(CH_2)_4CHO$ (I), b$_4$ 80–8°, $n^{25}D$ 1.4316, d_{25} 0.9994, was obtained from cyclohexanone by oxidation with $Pb(OAc)_4$ in abs. EtOH-C_6H_6. A mixt. of 5.4 g. I and 6.0 g. Ph_2NNH_2 in 20 ml. abs. EtOH kept 24 hrs., treated with 2.8 ml. concd. H_2SO_4 in 20 ml. abs. EtOH, refluxed 4 hrs., cooled, poured on ice, and extd. with Et_2O gave 48% *Et 4-(1-phenyl-3-indolyl)butyrate*, b$_4$ 207–10°, $n^{25}D$ 1.5944, which, refluxed 1 hr. with KOH in abs. EtOH, gave 90% free *acid*, m. 134.5–5.0° (from EtOH). Refluxing 3.1 g. $Bz(CH_2)_4CO_2H$, 2.16 g. $PhNHNH_2.HCl$, 12 ml. abs. EtOH, and 1.2 ml. concd. H_2SO_4 4 hrs., cooling, and pouring on ice gave 83% *Et 4-(2-phenyl-3-indolyl)butyrate*, m. 108.5–9.5° (from heptane), sapond. with alc. KOH to 80% free *acid*, m. 138–9°. Similarly, *p*-$MeC_6H_4CO(CH_2)_4CO_2H$ gave 70% *Et 4-(2-p-tolyl-3-indolyl)butyrate*, m. 102–3° (from heptane), which with alc. KOH gave 68% free *acid*, m. 137.5–8.0° (from 80% MeOH). Refluxing 3.5 g. *p*-$PhC_6H_4NHNH_2$ with 3 g. I in EtOH 1.5 hrs., letting the soln. stand 24 hrs., concg., and refluxing the residue 16 hrs. with 4 ml. concd. H_2SO_4 in 40 ml. abs. EtOH gave 13% *Et 4-(5-phenyl-3-indolyl)butyrate*, b$_1$ 195–202°, m. 105.5–7° (from dil. EtOH), sapond. to 78% free acid, m. 151.5–2.5°. The latter was an active *plant-growth stimulant* (root-growth test), but the 3-Ph analog was weakly active and the 2-Ph or 2-tolyl derivs. were completely inactive. G. M. K.

(2)

ROKHLIN, YE. M.

USSR/ Chemistry

Card 1/1 Pub. 22 - 20/51

Authors : Mamayev, V. P.; Suvorov, N. N.; and Rokhlin, E. M.

Title : Synthesis of beta-(2-thienyl)-beta-alanine and some of its derivatives

Periodical : Dok. AN SSSR 101/2, 269-271, Mar 11, 1955

Abstract : The synthesis of beta-(2-thienyl)-beta-alanine from thiophene-2-aldehyde is described. The method of obtaining these compounds and their derivatives is based on the reaction of homologous aldehydes with malonic acid in the presence of spirits of ammonia. Nine references: 4 USSR, 4 USA and 1 German (1912-1953).

Institution : The D. I. Mendeleyev Chemical Technological Institute, Moscow

Presented by: Academician I. N. Nazarov, September 24, 1954

5(3)

AUTHORS: Knunyants, I. L., Gambaryan, N. P., Rokhlin, Ye. M. (Moscow) SOV/74-27-12-1/4

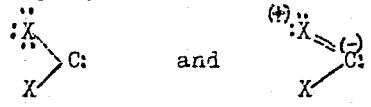
TITLE: Carbenes (Karbeny) Compounds of Bivalent Carbon Occurring in Intermediary Form in Organic Reactions (Soyedineniya dvukhvalentnogo ugleroda, promezhutochno obrazuyushchiyesya v organicheskikh reaktsiyakh)

PERIODICAL: Uspekhi khimii, 1958, Vol 27, Nr 12, pp 1361 - 1436 (USSR)

ABSTRACT: In this survey the authors made an attempt to deal thoroughly with the data known from publications on the intermediary formation of carbenes. In future the intermediary formation of carbenes may be expected to be demonstrated in the case of reactions of organic substances as well. The survey is concluded with the discussion of the carbene structure. At the moment it is not yet possible to say anything definite about the electron state of the carbenes - whether in singlet or triplet state. In the former case they can really be regarded as bases conjugate with carbon ions, in the latter case as radicals. The data in the publications are extremely contradictory. It frequently occurs that the individual authors draw different conclusions from one and the same

Card 1/4

condition. Approximative quantum-mechanical computations lead, however, to the conclusion that the basic state of the most simple carbene - methylene - is a triplet state. The interest for carbenes was roused in connection with the work carried out with carbene dihalides. It was proved that in the case of an effect of bases on "haloforms" a separation of the proton takes place. The trihalogen methyl anion formed in this connection is decomposed into carbene dihalide and halogen anion. As a result of its electrophilic nature carbene dihalide enters a reaction with a number of nucleophilic reagents. In consequence of the reaction of carbene dihalides with olefins propane dihalides are formed. This new reaction has found a wide field of application and makes various cyclohexane derivatives accessible; among them also compounds with a condensed system containing a cyclopropane cycle. It is possible to explain the relative stability of carbenes by means of the superposition of the following structures:



The energy yield is, however, too small to guarantee a complete stability of carbene dihalides as is the case with carbon oxide or isonitrilene. In the case of free methylene there is no such possibility; a shorter period of time, is, however, permissible. Free methylene is formed as a result of a thermal or photolytic separation of diazomethane or ketene. Data concerning the intermediary formation of methylene exist also with other reactions. In order to be able to obtain a carbene from a compound with a tetravalent carbon from the molecule of that compound, such an atom group must be separated which is connected with the carbon atom by means of two electron pairs. Such a reaction may be called an α-separation in the widest sense of the word. Thus it is possible to obtain not only carbenes with only one carbon atom but also substituted and complicated carbenes. Oxycarbenes have been most thoroughly investigated. The relative stability of oxycarbenes may be explained by an unseparated pair of electrons in the "carbene"-carbon atom with the carbonyl double binding. The carbene formation happens to be most unreliable in the synthesis of dimerolefins from halogen

Carbenes. Compounds of Bivalent Carbon Occurring as Intermediary Form in Organic Reactions SOV/74-27-12-1/4

derivatives. The possibility of an α-separation of hydrogen halide is proved by the investigation of hydrogen halide separation of deutero halides of the type RCD_2CH_2X and RCH_2CD_2X, even if the hydrogen atom is in a β-position. The α-separation of hydrogen halide is often accompanied by a process of regrouping which is in connection with the transformation of both hydrogen or deuterium and various groups connected with the β-hydrocarbon atom. Finally it may, however, be said that neither the geometric nor the electron structure of carbenes seems to be definitely investigated. There are 545 references, 72 of which are Soviet.

Card 4/4

KNUNYANTS, I.L.; ROKHLIN, Ye.M.; GAMBARYAN, N.P.; CHEBURKOV, Yu.A.; CHEN'TSIN-YUN' [Chen' Ch'ing-yung]

Fluorinated ketones. Bis(trifluoromethyl)glycolic acid . Khim. nauka i prom. 4 no.6:802-804 '59. (MIRA 13:8)

1. Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR.

(Glycolic acid)

ROKHLIN, Ye.M.; GAMBARYAN, N.P.; CHEN' TSIN-YUN' [Ch'ên Ch'ing-yün]; KNUNYANTS, I.L., akademik

2-Phenyl-4-hexafluoroisopropylidne-5-oxazolone. Dokl. AN SSSR 134 no.6:1367-1370 O '60. (MIRA 13:10)

1. Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR.
(Oxazolinone)

8604h
S/020/60/135/003/028/039
B016/B054

53600

AUTHORS: Rokhlin, Ye. M., Gambaryan, N. P., and Knunyants, I. L., Academician

TITLE: Mobility of Fluorine Atoms in Derivatives of Benzamido Hexafluoro Dimethyl Acrylic Acid

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 3, pp. 613 - 616

TEXT: The authors report on their investigations of the saponification of fluorine atoms of the trifluoro methyl group in α-benzamido hexafluoro dimethyl acrylic acid (I) and its derivatives. They proved that fluorine atoms are very easily saponified. In the reaction with a saturated $NaHCO_3$ solution at room temperature, (I) is transformed into the salt of 1-benzamido-2-trifluoro-methyl-ethylene-1,2-dicarboxylic acid (II). The authors state that (III), the esters of acid (I), behave similarly; but 2-phenyl-4-carbalkoxy-5-trifluoro-methyl-1,3-oxazinones-6 (V) are also formed besides the acid esters (IV) of acid (II). In the authors' opinion, this is due to a cyclization of the intermediate acid fluorides (VI). By a

Card 1/4

Mobility of Fluorine Atoms in Derivatives of Benzamido Hexafluoro Dimethyl Acrylic Acid

S/020/60/135/003/028/039
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reaction of acid esters (IV) with diazomethane, the authors obtained corresponding saturated esters: dimethyl ester (VII) and methyl-ethyl ester (VIII). (VII) is also formed in the methylation of the dicarboxylic acid (II) with diazomethane, whereas (VIII) is formed by a reaction of 2-phenyl-4-carbethoxy-5-trifluoro-methyl-1,3-oxazinone-6 with methanol in the presence of triethylamine. The saponification of the trifluoro methyl group in acid (I) and its derivatives proceeds easily, not only in alkaline medium. When boiling acid (I) with the hydrochloric acid solution of 2,4-dinitro-phenyl hydrazine, the authors isolated the 2,4-dinitro-phenyl hydrazone of α-trifluoro-methyl malonic semialdehyde (X). In the authors' opinion, this is due to a decarboxylation and saponification of one of the trifluoro methyl groups. The authors explain the very easy saponification of the trifluoro methyl group in acid (I) and its derivatives by the conjugation of the C-F bonds not only with the C=C double bond but also with the unseparated electron pair of the nitrogen atom. There are 4 references: 1 Soviet, 1 US, and 2 British.

Card 2/4

(VIII) O—C
C6H5
(VI6)

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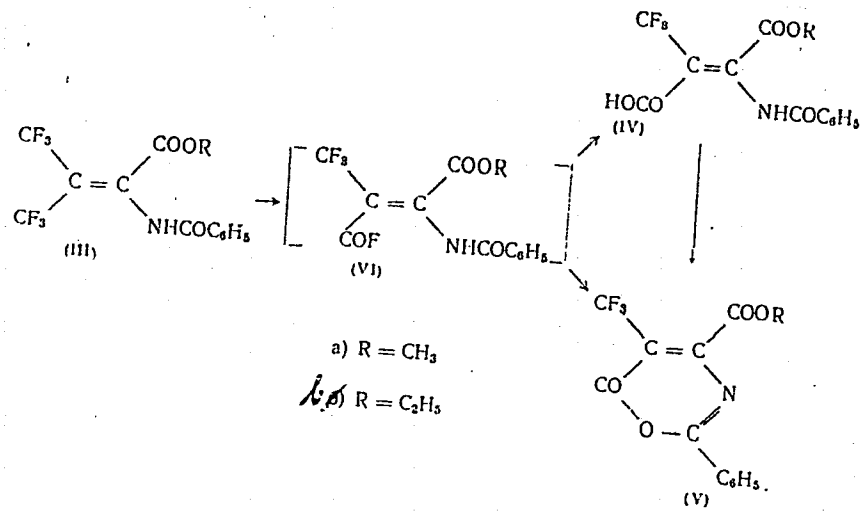
B016/B054



a) $R = CH_3$

b) $R = C_2H_5$

Card 4/4

613

KNUNYANTS, I.L.; GAMBARYAN, N.P.; ROKHLIN, Ye.M.

2-Phenyl-4-hexafluoroisopropyl-5-benzoyloxyoxazole. Izv. AN SSSR. Otd.khim.nauk no.5:924-926 My '62. (MIRA 15:6)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Oxazole)

GAMBARYAN, N.P.; ROKHLINA, Yel.M.; ZEYFMAN, Yu.V.

Reaction of fluorinated ketones with olefins. Izv. AN SSSR. Ser. khim. no.8:1466-1469 '65. (MIRA 18:9)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

KNUNYANTS, I.L., akademik; KOCHARYAN, S.T.; CHEBURKOV, Yu.A.; BARGAMOVA, M.D.; ROKHLIN, Ye.M.

Reversibel dehydrofluorination of 2-monohydroperfluoroisobutane and γ-hydrohexafluoroisobutyric acid esters. Dokl. AN SSSR 165 no.4:827-830 D '65. (MIRA 18:12)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

UNANYAN, M.P.; KONDRAT'YEVA, G.V.; LOCHMELIS, A.Ya.; ZAV'YALOV, S.I.; ZEYFMAN, Yu.V.; GAMBARYAN, N.P.; MINASYAN, R.B.; KNUNYANTS, I.L.; KOCHARYAN, S.T.; ROKHLIN, Ye.M.; KAVERZNEVA, Ye.D.; KORSHAK, V.V.; ROGOZHIN, S.V.; DAVANKOV, V.A.; TSEYTLIN, G.M.; PAVLOV, A.I.; ZAKHARKIN, L.I.; OKHLOBYSTIN, O.Yu.; SEMIN, G.K.; BABUSHKINA, T.A.; BLIEVICH, K.A.

Letters to the editor. Izv. AN SSSR. Ser. khim. no.1:1909-1914 '65. (MIRA 18:1)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR (for Unanyan, Kondrat'yeva, Lochmelis, Zav'yalov, Kaverzneva). 2. Institut elementoorganicheskikh soyedineniy AN SSSR (for Zeyfman, Gambaryan, Minasyan, Knunyants, Kocharyan, Rokhlin, Korshak, Rogozhin, Davankov, Zakharkin, Okhlobystin, Semin, Babushkina, Bilevich).

L 05171-67 EWT(m)/EWP(j) WW/JW/RM
ACC NR: AP7000729 SOURCE CODE: UR/0062/66/000/006/1057/1062

29 B

KNUNYANTS, I. L., KOCHARYAN, S. T., ROKHLIN, Ye. M., Institute of Heteroorganic Compounds, Academy of Sciences USSR (Institut elementoorganicheskikh soyedineniy AN SSSR)

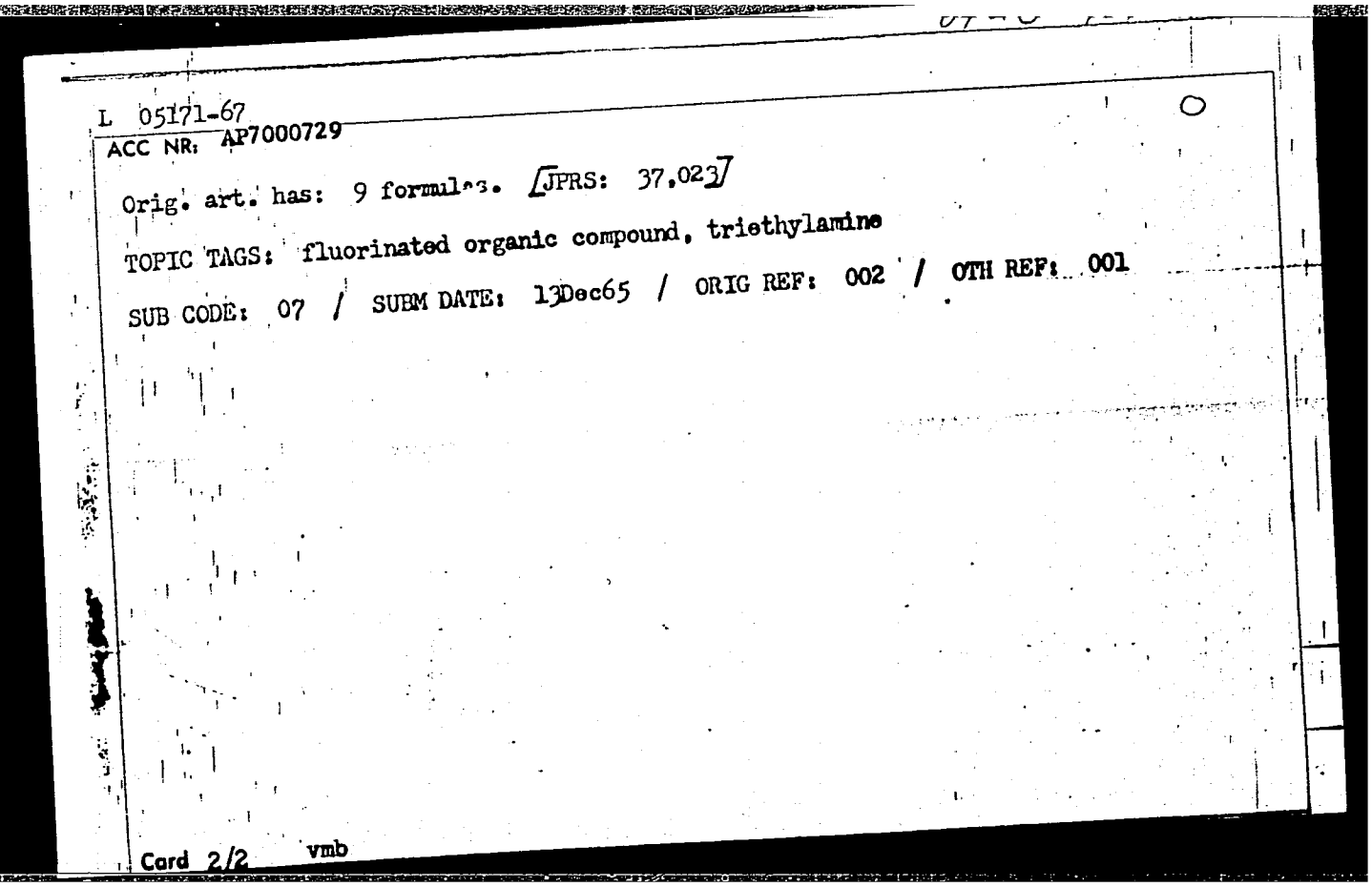
"Mobility of Hydrogen Atoms in Monohydroperfluoroalkanes and Related Compounds. Communication 2. 2-Monohydroperfluoroisobutane in the Michael Reaction"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, 1966, pp 1057-1062

Abstract: The synthetic utilization of the proton mobility of hydrogen atoms in monohydroperfluoroalkanes, induced by the electron repelling action of the perfluoroalkyl groups, was demonstrated for the first time. It was found that triethylamine can be used successfully as the catalyst of the Michael reaction in the case of 2-monohydroperfluoroisobutane and related compounds. In the presence of triethylamine, 2-monohydroperfluoroisobutane adds to acrylic systems (acrylonitrile, methyl acrylate, and acrolein), yielding beta-(perfluoro-tert-butyl) propionitrile, the methyl ester of beta-(perfluoro-tert-butyl) propionic acid, and beta-(perfluoro-tert-butyl) propionaldehyde, which may be used as sources for the synthesis of organic compounds containing the perfluoro-tert-butyl group. Esters of alpha-hydrohexafluoroisobutyric acid and trifluoro-methylmalonic acid react analogously, to form the corresponding beta-substituted propionitriles. A reaction mechanism including intermediate formation of a carbanion, which reacts with the activated double bond, is proposed.

UDC: 542.95 + 661.723-16

Card 1/2



L 05171-67
ACC NR: AP7000729

Orig. art. has: 9 formulas. [JPRS: 37,023]

TOPIC TAGS: fluorinated organic compound, triethylamine

SUB CODE: 07 / SUBM DATE: 13Dec65 / ORIG REF: 002 / OTH REF: 001

Card 2/2 vmb

GAMBARYAN, N.P.; ROKHLIN, Ye.M.; ZEYFMAN, Yu.V.; KNUNYANTS, I.L.

Bis (trifloromethyl) ketene anil. Izv. AN SSS. Ser. khim. no.4: 749-750 '65. (MIRA 18:5)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

MINASYAN, R.B.; ROKHLIN, Ye.M.; GAMBARYAN, N.P.; ZEYFMAN, Yu.V.; KNUNYANTS, I.L.

Bis (trifluoromethyl) cyclodiazomethane. Izv. AN SSSR. Ser. khim. no.4:761 '65. (MIRA 18:5)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

ROKHLIN, Ye.M.; ZEYFMAN, Yu.V.; CHEBURKOV, Yu.A.; GAMBARYAN, N.P.; KNUNYANTS, I.L., akademik

Reaction of hexafluoroacetone with triethyl phosphite. Dokl. AN SSSR 151 no.6:1356-1358 Ap '63. (MIRA 18:5)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

ROKHLIN, Ye.M.; GAMBARYAN, N.P.; KNUNYANTS, I.L.

Reaction between 2-phenyl-4-hexafluoroisioproylidene-5-oxazolone and ketene. Izv. AN SSSR. Ser. khim. no.11:1952-1958 N '63. (MIRA 17:1)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

ROKHLIN, Ye.M.; GAMBARYAN, N.P.

N-benzoyl-β,β-bis-(trifluoromethyl)-dl-glutamic acid in the Borodin reaction. Izv. AN SSSR. Ser. khim. no.11:1959-1966 N '63. (MIRA 17:1)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

ROKHLIN, Yu., podpolkovnik

First experience and its lessons; notes of an instructor at a military school. Voen.vest. 43 no.10:76-79 O '63. (MIRA 16:12)

ROKHLINA, E. YA.

E. Ya. Rokhlina, "On the Anatomy of the Potato Plant Affected with Mosaic-like Diseases," Materialy po Mikologii i Fitopatologii, vol. 8, no. 2, 1931, pp. 145-154. 464.9 R92M

SO: Sira Si 90-53, 15 Dec 1953

ROKHLINA, E. YA.

E. Ya. Rokhlina, "About the Resistance of Crucifers to Plasmodiophora brassicae," Biulleten' VII Vsesoiuznogo S'ezda po Zashchity Rastenii v Leningrade 15-23 Noiabria 1932 Goda, no. 8, 1932, pp. 29-30. 423.92 V96

SO: Sira Si 90-53, 15 Dec 1953

ROKHLINA, E.

"Radio races of yeasts and their practical significance," Vestn. rentgen. i radiol., 11, 1932.

ROKHLINA, E. YA.

E. Ya. Rokhlina, "On the Question of the Non-susceptibility of Cruciferae to Plasmodiophora brassicae Wor.," Trudy po Zashchity Rastenii, Seriia 2, no. 3, 1933, pp. 8-31. 423.92 L54P

SO: Sira Si 90-53, 15 Dec 1953

ROKHLINA, E.

"The structure of radio races of Saccharomyces cereviseae XII with Ameboid-shaped Cells," Izv. AN SSSR, 11, p 327, 1934.

ROKHLINA, E. YA.

E. Ya. Rokhlina "Reaction of Plant Tissues to Viruses," in Abstracts of Reports of the All Union Conference on the Study of Ultra-microbes and Filtrable Viruses (14-18 December 1935), Publishing House of the Academy of Science USSR, Moscow, 1935, pp. 12-13. 448.39 Ak1

SO: Sira Si 90-53, 15 Dec 1953

ROKHLINA, E. YA.

E. Ya. Rokhlina "On Some Peculiarities of Late Blight Resistant Potato Varieties," Raboty Nauchno-Issledovatel'skogo Instituta Kartofel'nogo Khoziaistva, no. 4, 1935, pp. 85-95, 75.9 L54

SO: Sira Si 90-53, 15 Dec 1953

ROKHLINA, E.Y.

1098. Singularity of faecal microflora in cancerous stomachs. E. Y. Rokhlina *Uchen. Zap. 1-go Leningr. med. Inst.*, 1955, 2, 233—241; *Referat. Zh. Biol.*, 1956, Abstr. No. 71221.—From healthy people and also from those with different non-cancerous diseases, normal intestinal bacilli [NIB] are isolated in 100% of the cases. In those with carcinomas of the alimentary tract the NIB are very rarely encountered; for the most part the characteristic features of the faecal flora have the appearance of atypical strains of *B. coli* and capsule bacteria, absent in healthy people. In cancer patients with localised tumours which are not in the alimentary tract, NIB are encountered fairly often, and the % of isolations of capsule microbes is insignificant, the capsules being generally weakly expressed. Capsule strains possess a high toxicity for mice. They are typical strains of *B. aërogenes* and forms intermediate between *B. coli* and *B. aërogenes*. It must be assumed that *B. aërogenes* appears in patients with cancer of the alimentary tract as a result of sharply disturbed carbohydrate metabolism. In the faeces of these patients there are also found iodophilic bacteria and lactic acid bacilli. (Russian)

B. C. VICKERY

1

Med

ROKHLINA, E.Ya., doktor biologicheskikh nauk

Microflora of the intestines in elderly persons. Trudy LIETIN no.4:48-54 '60. (MIRA 16:2)
(GERIATRICS) (INTESTINES--MICROBIOLOGY)

ROKHLINA, E.Ya.

Peculiarity of fecal mircroflora in gastric cancer. Trudy LMI 2:233-241 '55 (MIRA 11:8)

1. Kafedra mikrbiologii (zav. - prof. V.M. Kosmodamianskiy) Pervogo Leningradskogo meditsinskogo instituta imeni akademika I.P. Pavlova.
(STOMACH--CANCER)
(INTESTINES--BACTERIOLOGY)

BOYKLINA, Emiliya Yakovlevna

Academic degree of Doctor of Biological Sciences, based on her defense, 29 November 1954, in the Council of the First Leningrad Med Inst imeni Pavlov, of her dissertation entitled: "The Biological Action of Radon, as Affected by the Medium and the Physiological State of the Organism."

Academic degree and/or title: Doctor of Sciences

SO: Decisions of VAK, List no. 25, 10 Dec 55, Byulleten' MVO SSSR, Uncl. JPRS/NY 548

ROKHLINA, I.

Ensure a supply of unbreakable laboratory vessels to industrial laboratories. Zav.lab. 25 no.2:249 ' 59. (MIRA 12:3)

1. Nachal'nik laboratorii Tuymazinskogo gazobenzinnogo zavoda.
(Laboratories--Equipment and supplies)

ROKHLINA, I.

Operation of KhT-2M chromathermograph. Gaz. delo no.4:36-38'64
(MIRA 17:7)

1. Tuymazinskiy gazobenzinovyy zavod.

SOV/58-

2814)

AUTHOR: Rokhlina, I., Head of Laboratory, Tuymazy Fuel Gas Plant

TITLE: On the Supply of Plant Laboratories With Non-breakable Containers (Obespechit' zavodskiye laboratorii neb'yushcheysya laboratornoy posudoy)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 2, p 249 (USSR)

ABSTRACT: Since the supply of plant laboratories with laboratory containers has so far been inadequate and, on the other hand, the consumption of such vessels and containers is rather high, it is necessary to increase the production of laboratory containers and small glass articles for laboratory use. In the first place, measuring cylinders of 100 ml capacity, measuring flasks, burettes, gas pyknometers, and Dewar flasks are needed. All these articles may be made of transparent plastic material. It is especially recommended to manufacture Dewar flasks from plastics, since such flasks are often used and their prices are high. In the institute referred to in the association two apparatuses of the TsIATIM-51 type and one TsIATIM-52 apparatus are being employed for the fractionating of gas mixtures.

Card 1/2

Card 2/2

ROKHLINA, I.A.

Fast method for determining the heating capacity of hydrocarbon gases. Gaz. delo no.7:37-38 '64. (MIRA 17:8)

1. Tuymazinskiy gazobenzinovyy zavod.

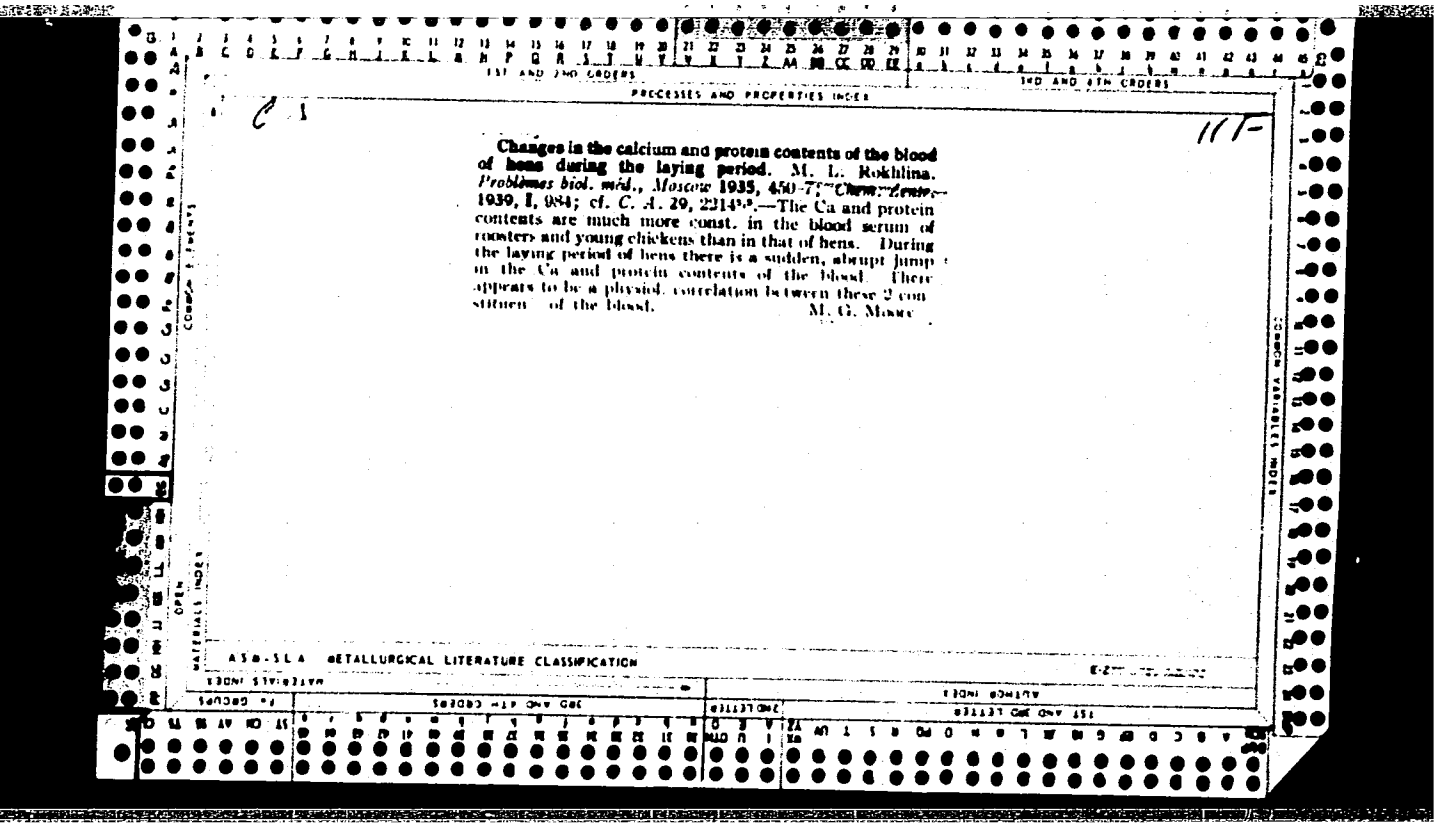
ROKHLINA, I.A.

Analyses of the absorbent and of unstable casing-head gasoline.
Gaz.prom. 6 no.4:50-51 '61. (MIRA 14:3)
(Gas, Natural) (Absorption)

ROKHLINA, L.A.

Chromatographic analysis of petroleum gas. Gaz. delo no.7:24-26 '65.
(MIRA 18:9)

1. Tuymazinskiy gazobenzinovyy zavod.



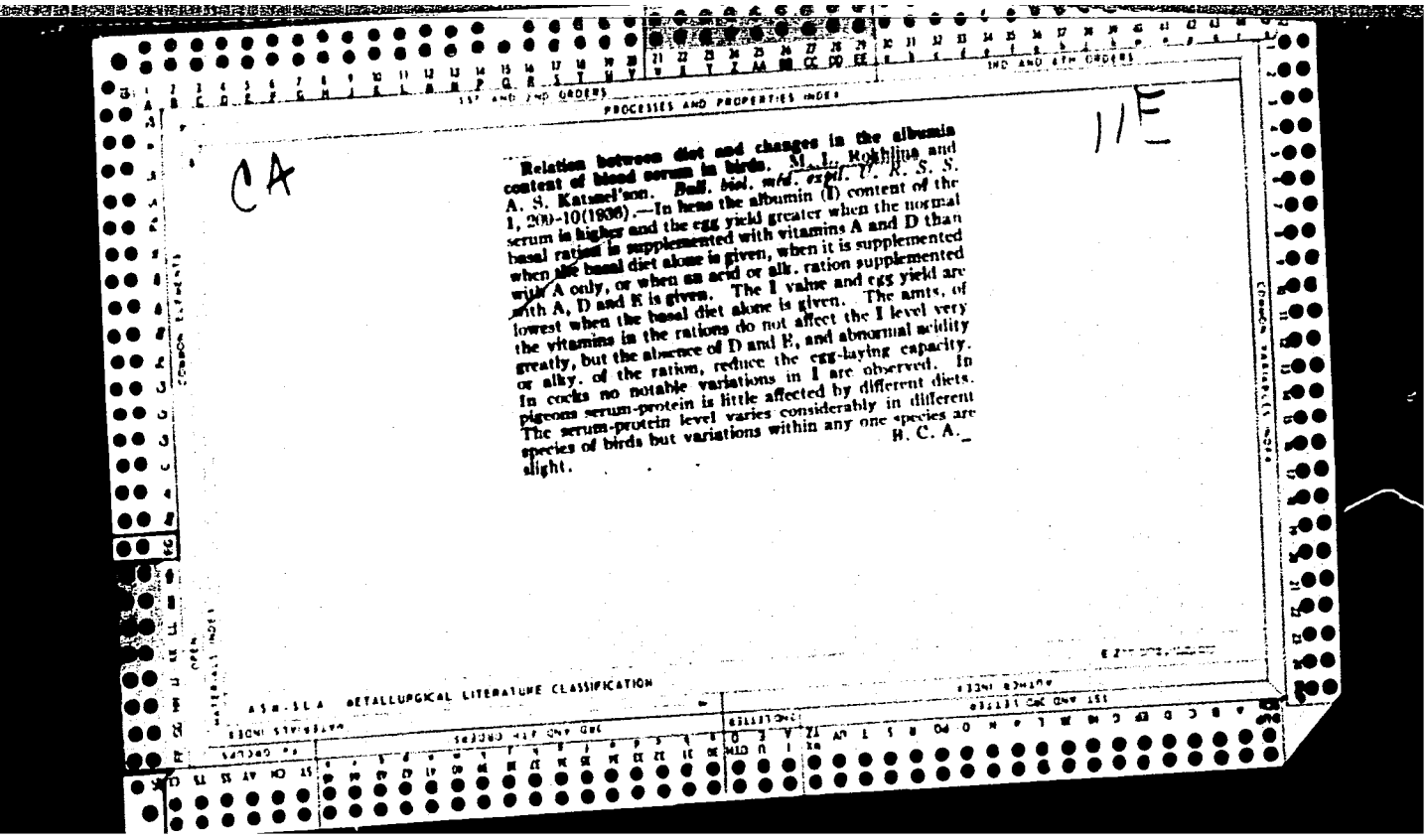
PROCESSES AND PROPERTIES INDEX

C I

111-

Changes in the calcium and protein contents of the blood of hens during the laying period. M. L. Rokhlina. *Problèmes biol. méd., Moscow* **1935**, 450-7; *Chem. Zentr.*, **1939, I**, 984; cf. *C. A.* **29**, 2214⁹.—The Ca and protein contents are much more const. in the blood serum of roosters and young chickens than in that of hens. During the laying period of hens there is a sudden, abrupt jump in the Ca and protein contents of the blood. There appears to be a physiol. correlation between these 2 constituents of the blood.
M. G. Mazur

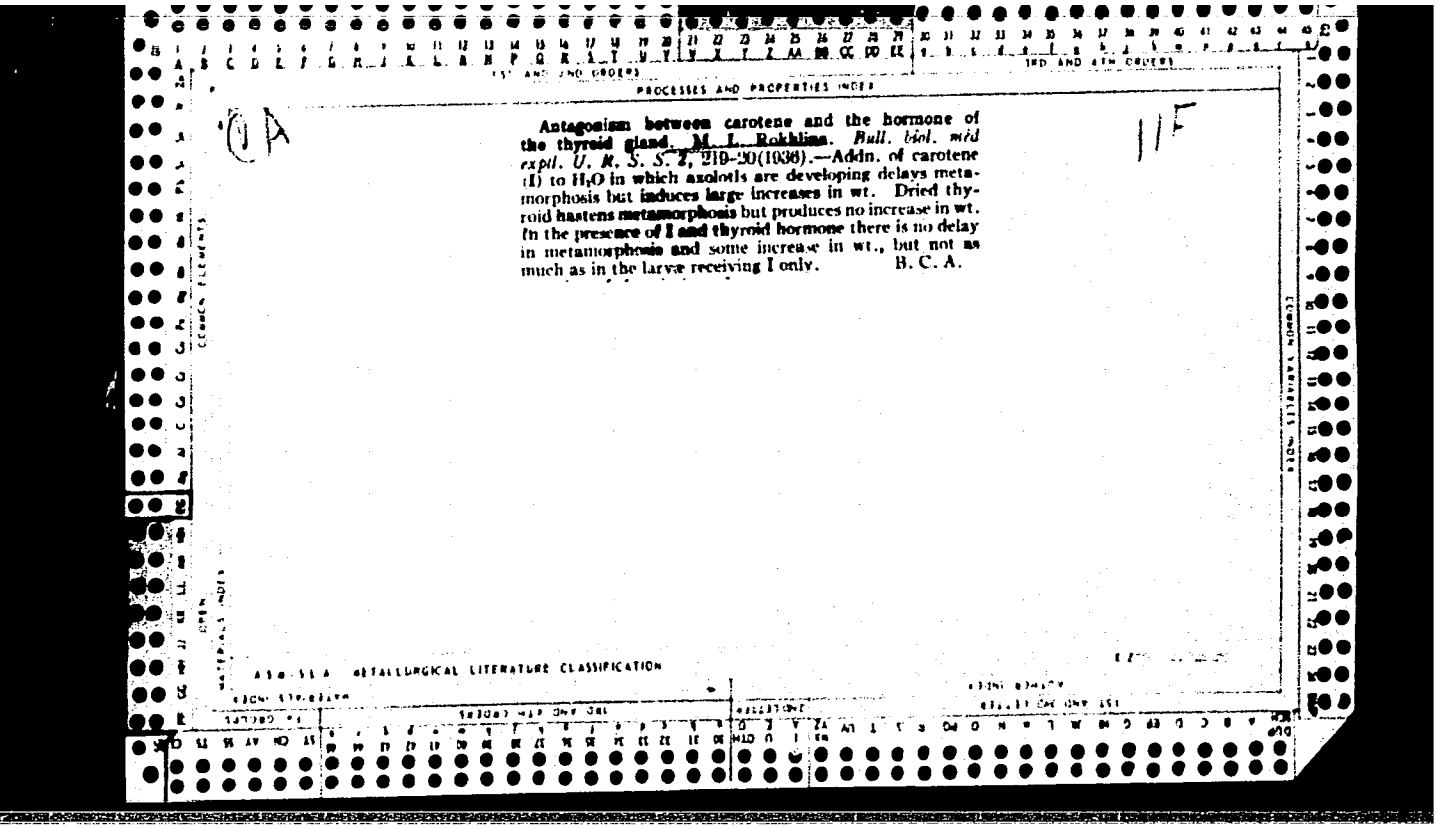
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

11E

Relation between diet and changes in the albumin content of blood serum in birds. M. I. Robbina and A. S. Katsnel'son. *Bull. biol. med. exptl. U. R. S. S.* 1, 209-10(1936).—In hens the albumin (I) content of the serum is higher and the egg yield greater when the normal basal ration is supplemented with vitamins A and D than when the basal diet alone is given, when it is supplemented with A only, or when an acid or alk. ration supplemented with A, D and E is given. The I value and egg yield are lowest when the basal diet alone is given. The amts. of the vitamins in the rations do not affect the I level very greatly, but the absence of D and E, and abnormal acidity or alky. of the ration, reduce the egg-laying capacity. In cocks no notable variations in I are observed. In pigeons serum-protein is little affected by different diets. The serum-protein level varies considerably in different species of birds but variations within any one species are slight. H. C. A.



PROCESSES AND PROPERTIES INDEX

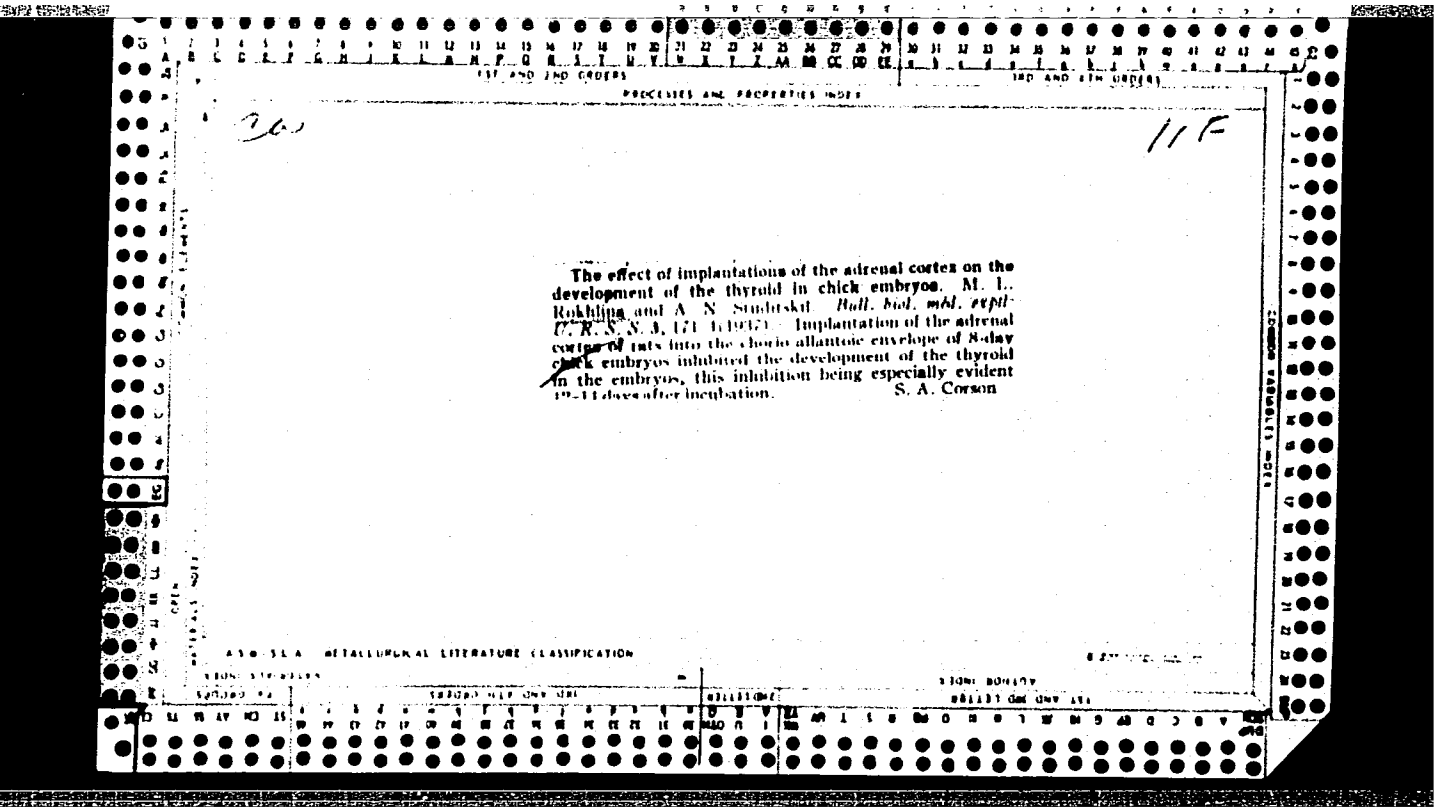
Antagonism between carotene and the hormone of the thyroid gland. M. I. Rokhlina. *Bull. biol. méd exptl. U. R. S. S.* 2, 219-20(1936).—Addn. of carotene (I) to H_2O in which axolotls are developing delays metamorphosis but induces large increases in wt. Dried thyroid hastens metamorphosis but produces no increase in wt. In the presence of I and thyroid hormone there is no delay in metamorphosis and some increase in wt., but not as much as in the larvæ receiving I only. B. C. A.

A59-51A METALLURGICAL LITERATURE CLASSIFICATION

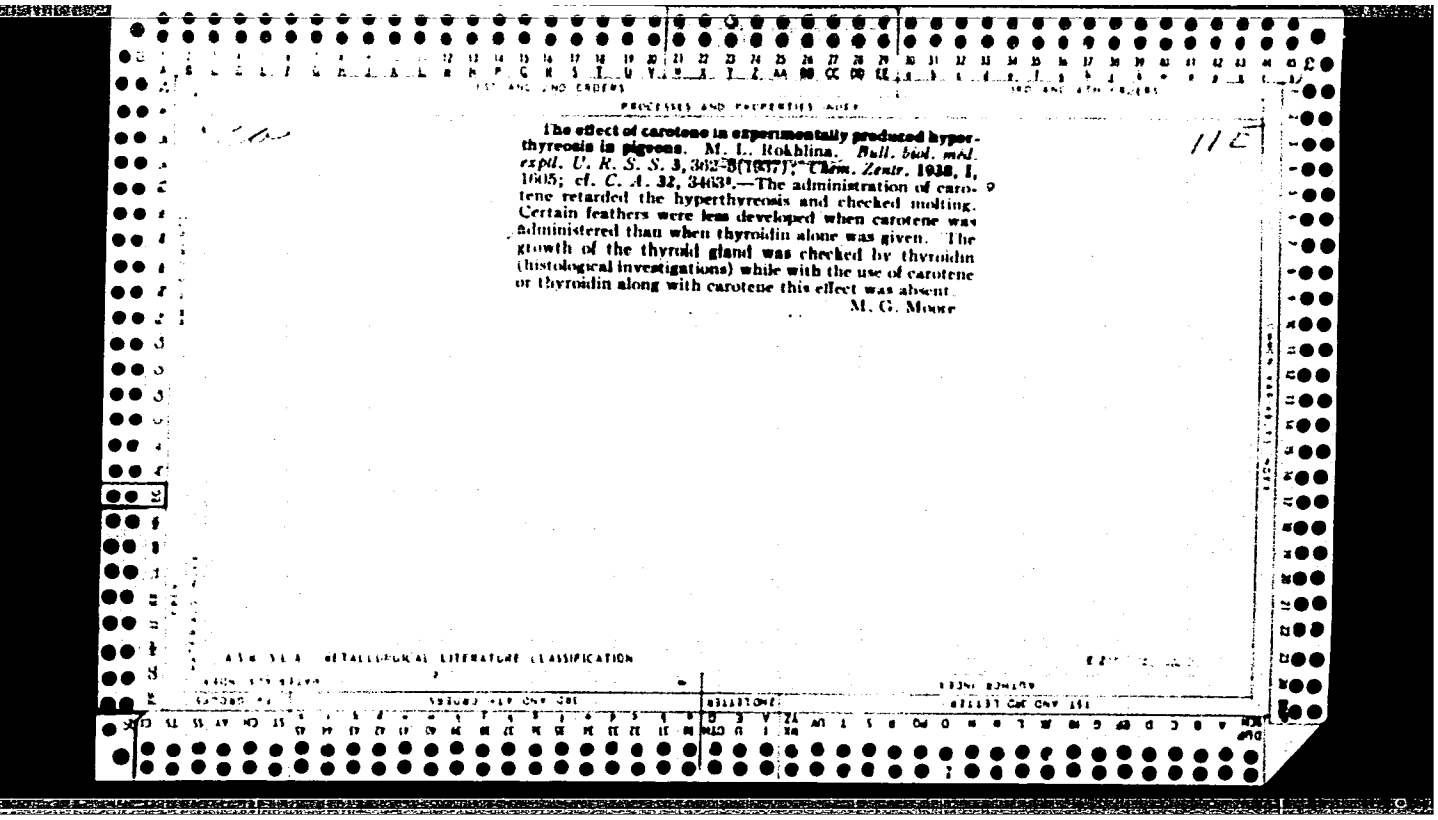
ROKHLINA, M. L.

"Research Lines in Vital Microscopy", (p. 537) by Rokhlina, M. L.

SO: Advances in Contemporary Biology (USPEKHI SOVREMENNOI BIOLOGII) Vol. V, No. 3 1936

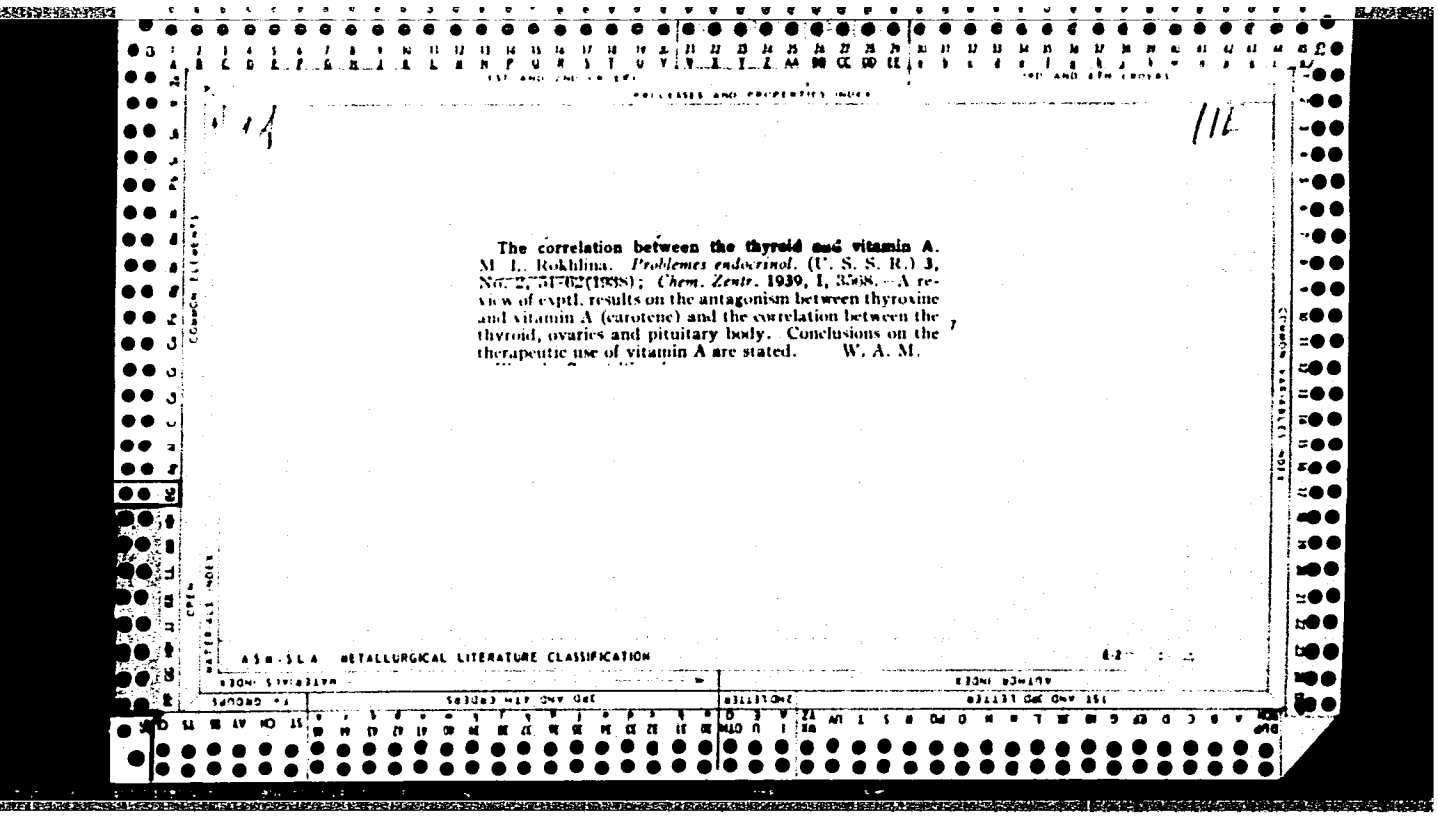


The effect of implantations of the adrenal cortex on the development of the thyroid in chick embryos. M. L. Rokhlina and A. N. Studitskii. *Bull. biol. méd. exptl. U.R.S.S.* N.3, 171 (1957). Implantation of the adrenal cortex of rats into the chorio allantoic envelope of 8-day chick embryos inhibited the development of the thyroid in the embryos, this inhibition being especially evident 10–11 days after inoculation. S. A. Corson

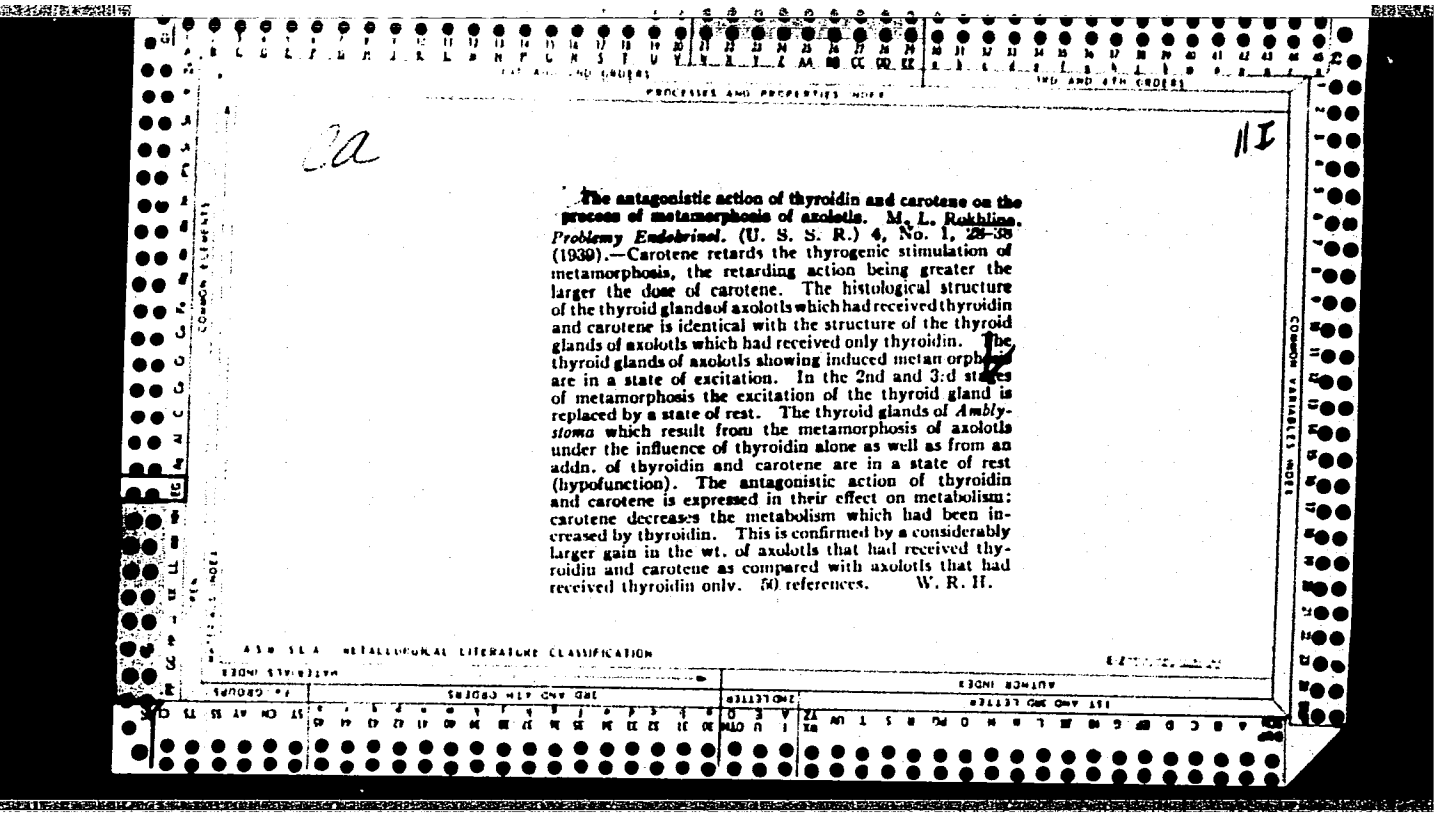


The effect of carotene in experimentally produced hyperthyreosis in pigeons. M. L. Rokhlina. *Bull. biol. med. expil. U. R. S. S.* **3**, 362-8(1937); *Chem. Zentr.* **1938**, I, 1605; cf. *C. A.* **32**, 3463⁹.—The administration of carotene retarded the hyperthyreosis and checked molting. Certain feathers were less developed when carotene was administered than when thyroidin alone was given. The growth of the thyroid gland was checked by thyroidin (histological investigations) while with the use of carotene or thyroidin along with carotene this effect was absent.

M. G. Moore



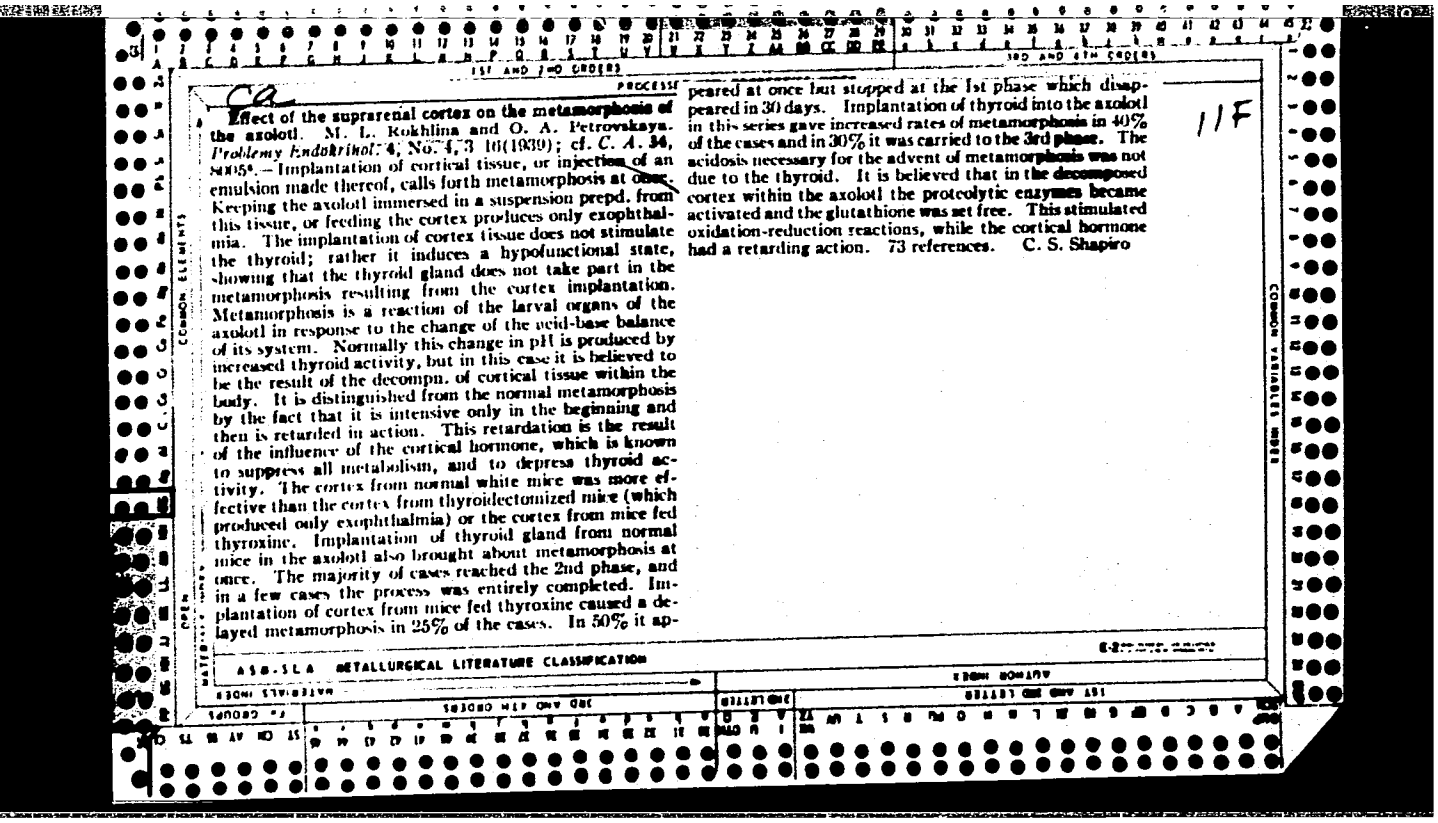
The correlation between the thyroid and vitamin A. M. L. Rokhlina. *Problemes endocrinol.* (U. S. S. R.) **3**, No. 2, 51-62 (1938); *Chem. Zentr.* **1939**, I, 3568.—A review of exptl. results on the antagonism between thyroxine and vitamin A (carotene) and the correlation between the thyroid, ovaries and pituitary body. Conclusions on the therapeutic use of vitamin A are stated. W. A. M.



2a

11 I

The antagonistic action of thyroidin and carotene on the process of metamorphosis of axolotls. M. L. Rukhlina. *Problemy Endokrinol.* (U. S. S. R.) 4, No. 1, 28–38 (1939).—Carotene retards the thyrogenic stimulation of metamorphosis, the retarding action being greater the larger the dose of carotene. The histological structure of the thyroid glands of axolotls which had received thyroidin and carotene is identical with the structure of the thyroid glands of axolotls which had received only thyroidin. The thyroid glands of axolotls showing induced metamorphosis are in a state of excitation. In the 2nd and 3:d stages of metamorphosis the excitation of the thyroid gland is replaced by a state of rest. The thyroid glands of *Amblystoma* which result from the metamorphosis of axolotls under the influence of thyroidin alone as well as from an addn. of thyroidin and carotene are in a state of rest (hypofunction). The antagonistic action of thyroidin and carotene is expressed in their effect on metabolism: carotene decreases the metabolism which had been increased by thyroidin. This is confirmed by a considerably larger gain in the wt. of axolotls that had received thyroidin and carotene as compared with axolotls that had received thyroidin only. 50 references. W. R. H.

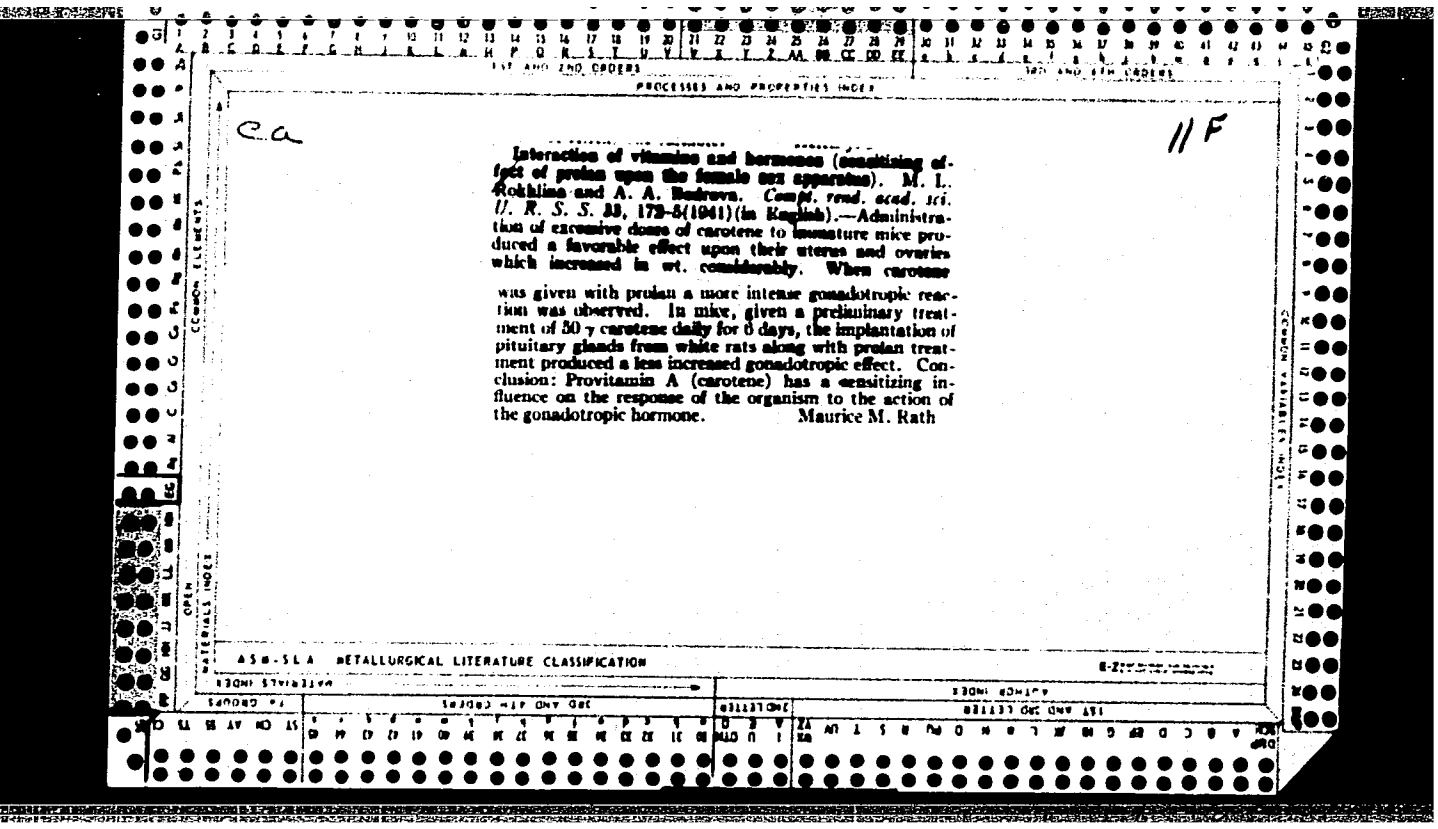


Effect of the suprarenal cortex on the metamorphosis of the axolotl. M. L. Rokhlina and O. A. Petrovskaya. *Problemy Endokrinol.* 4, No. 4, 3–16(1939); cf. *C. A.* **34**, 8005⁶.—Implantation of cortical tissue, or injection of an emulsion made thereof, calls forth metamorphosis at once. Keeping the axolotl immersed in a suspension prepd. from this tissue, or feeding the cortex produces only exophthalmia. The implantation of cortex tissue does not stimulate the thyroid; rather it induces a hypofunctional state, showing that the thyroid gland does not take part in the metamorphosis resulting from the cortex implantation. Metamorphosis is a reaction of the larval organs of the axolotl in response to the change of the acid-base balance of its system. Normally this change in pH is produced by increased thyroid activity, but in this case it is believed to be the result of the decompn. of cortical tissue within the body. It is distinguished from the normal metamorphosis by the fact that it is intensive only in the beginning and then is retarded in action. This retardation is the result of the influence of the cortical hormone, which is known to suppress all metabolism, and to depress thyroid activity. The cortex from normal white mice was more effective than the cortex from thyroidectomized mice (which produced only exophthalmia) or the cortex from mice fed thyroxine. Implantation of thyroid gland from normal mice in the axolotl also brought about metamorphosis at once. The majority of cases reached the 2nd phase, and in a few cases the process was entirely completed. Implantation of cortex from mice fed thyroxine caused a delayed metamorphosis in 25% of the cases. In 50% it appeared at once but stopped at the 1st phase which disappeared in 30 days. Implantation of thyroid into the axolotl in this series gave increased rates of metamorphosis in 40% of the cases and in 30% it was carried to the 3rd phase. The acidosis necessary for the advent of metamorphosis was not due to the thyroid. It is believed that in the decomposed cortex within the axolotl the proteolytic enzymes became activated and the glutathione was set free. This stimulated oxidation-reduction reactions, while the cortical hormone had a retarding action. 73 references. C. S. Shapiro

11F

[illegible], M. I.

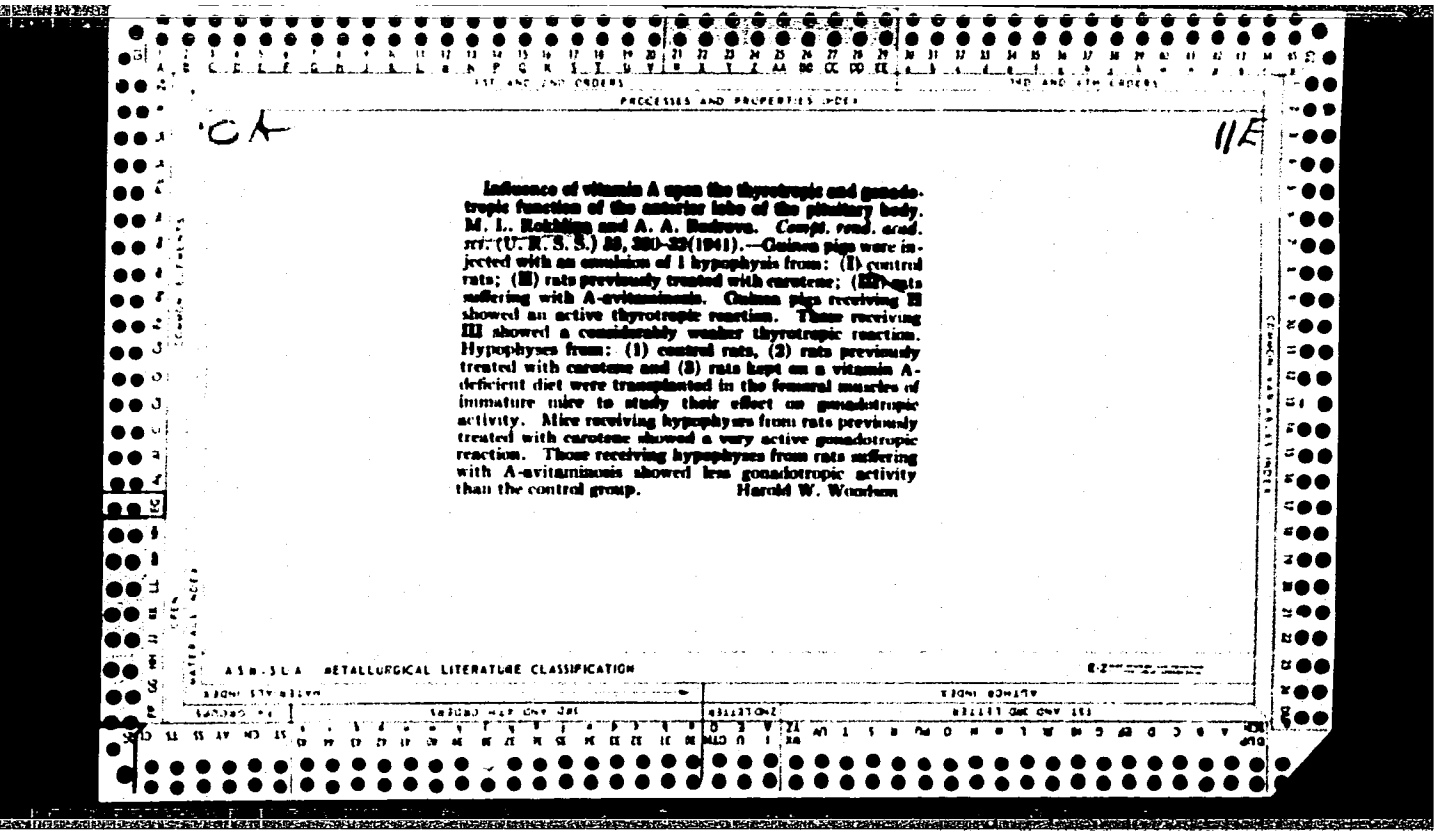
"The Biological Operation of P-Ions and Ionzits (Decomposition Product of Vitamin A)," Dok. AN, 30, No.9, 1941.



Ca

11F

Interaction of vitamins and hormones (conditioning effect of prolan upon the female sex apparatus). M. I. Rokhlina and A. A. Bodrova. *Compt. rend. acad. sci. U. R. S. S.* **33**, 173-5(1941)(in English).—Administration of excessive doses of carotene to immature mice produced a favorable effect upon their uterus and ovaries which increased in wt. considerably. When carotene was given with prolan a more intense gonadotropic reaction was observed. In mice, given a preliminary treatment of 50 γ carotene daily for 6 days, the implantation of pituitary glands from white rats along with prolan treatment produced a less increased gonadotropic effect. Conclusion: Provitamin A (carotene) has a sensitizing influence on the response of the organism to the action of the gonadotropic hormone. Maurice M. Rath



PROCESSES AND PROPERTIES INDEX

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11E

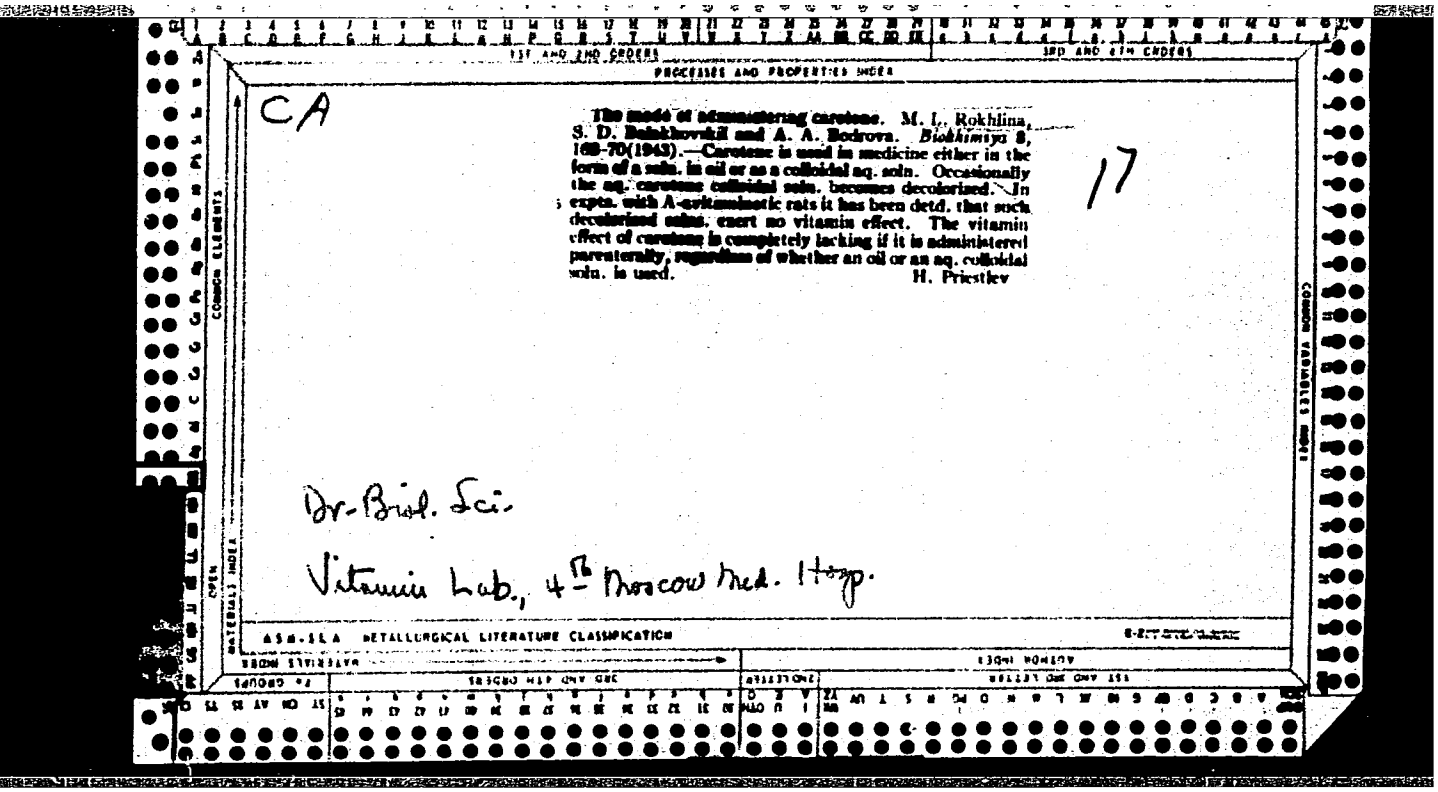
Influence of vitamin A upon the thyrotropic and gonadotropic function of the anterior lobe of the pituitary body. M. L. Robbins and A. A. Rudnova. *Compt. rend. acad. sci. (U. R. S. S.)* 30, 330-32(1941).—Guinea pigs were injected with an emulsion of 1 hypophysis from: (I) control rats; (II) rats previously treated with carotene; (III) rats suffering with A-avitaminosis. Guinea pigs receiving II showed an active thyrotropic reaction. Those receiving III showed a considerably weaker thyrotropic reaction. Hypophyses from: (1) control rats, (2) rats previously treated with carotene and (3) rats kept on a vitamin A-deficient diet were transplanted in the femoral muscles of immature mice to study their effect on gonadotropic activity. Mice receiving hypophyses from rats previously treated with carotene showed a very active gonadotropic reaction. Those receiving hypophyses from rats suffering with A-avitaminosis showed less gonadotropic activity than the control group. Harold W. Wanless

A.S.M.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

ROKHLINA, M.L.

"Changes in the Structure of Suprarenal Cortex as Caused by Endocrine Glands" (p.224) by M.L. Rokhlina (Moscow)

SO: Advances in Modern Biology (Uspekhi Sovremennoi Biologii) Vol. XV, 1942, No.2



PROCESSES AND PROPERTIES INDEX

CA

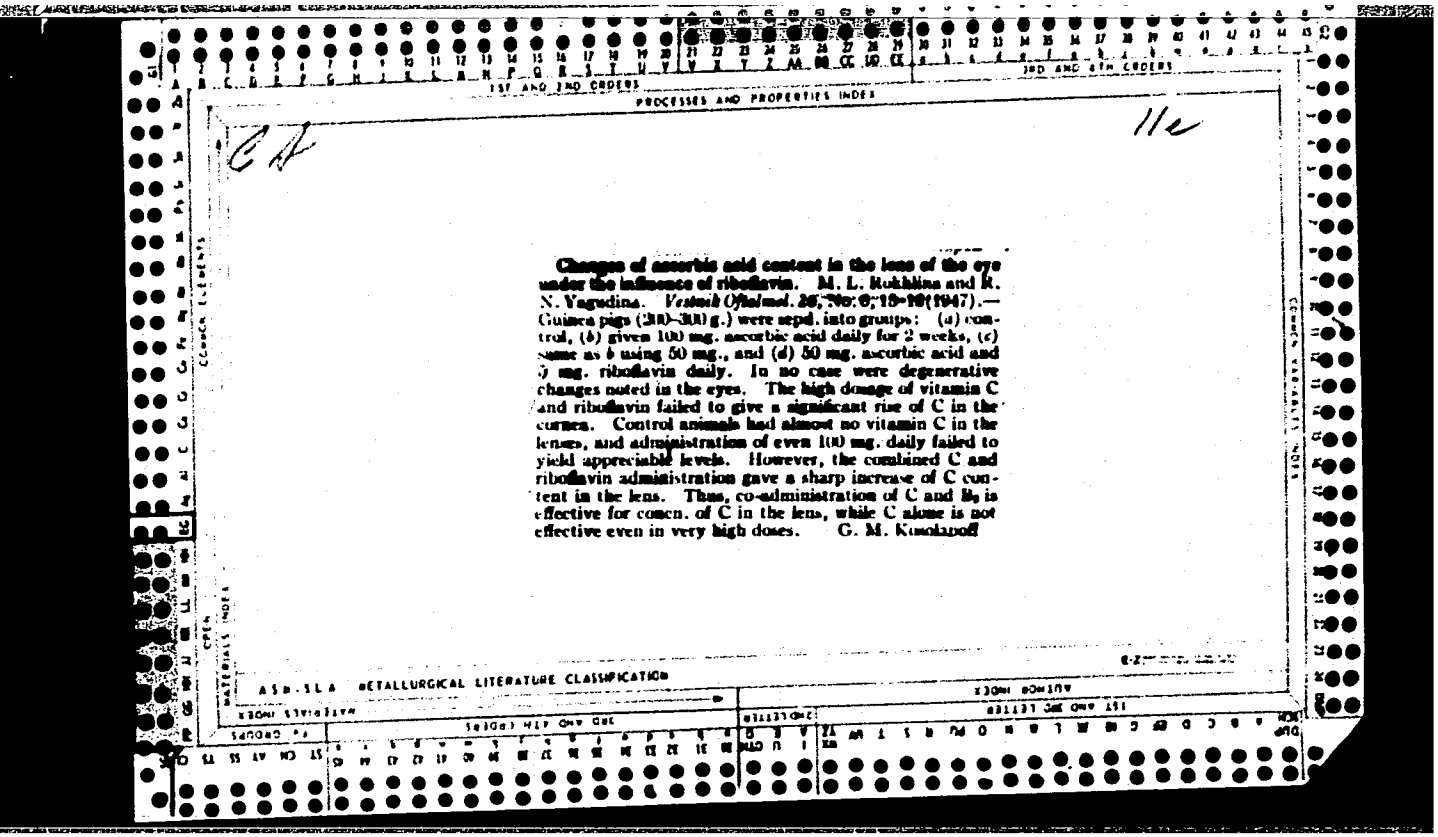
The mode of administering carotene. M. I. Rokhlina, S. D. Rubkhovskii and A. A. Bodrova. *Biokhimiya* 8, 168-70(1943).—Carotene is used in medicine either in the form of a soln. in oil or as a colloidal aq. soln. Occasionally the aq. carotene colloidal soln. becomes decolorized. In expts. with A-avitaminotic rats it has been detd. that such decolorized solns. exert no vitamin effect. The vitamin effect of carotene is completely lacking if it is administered parenterally, regardless of whether an oil or an aq. colloidal soln. is used. H. Priestley

17

Dr. Biol. Sci.

Vitamin Lab., 4th Moscow Med. Hosp.

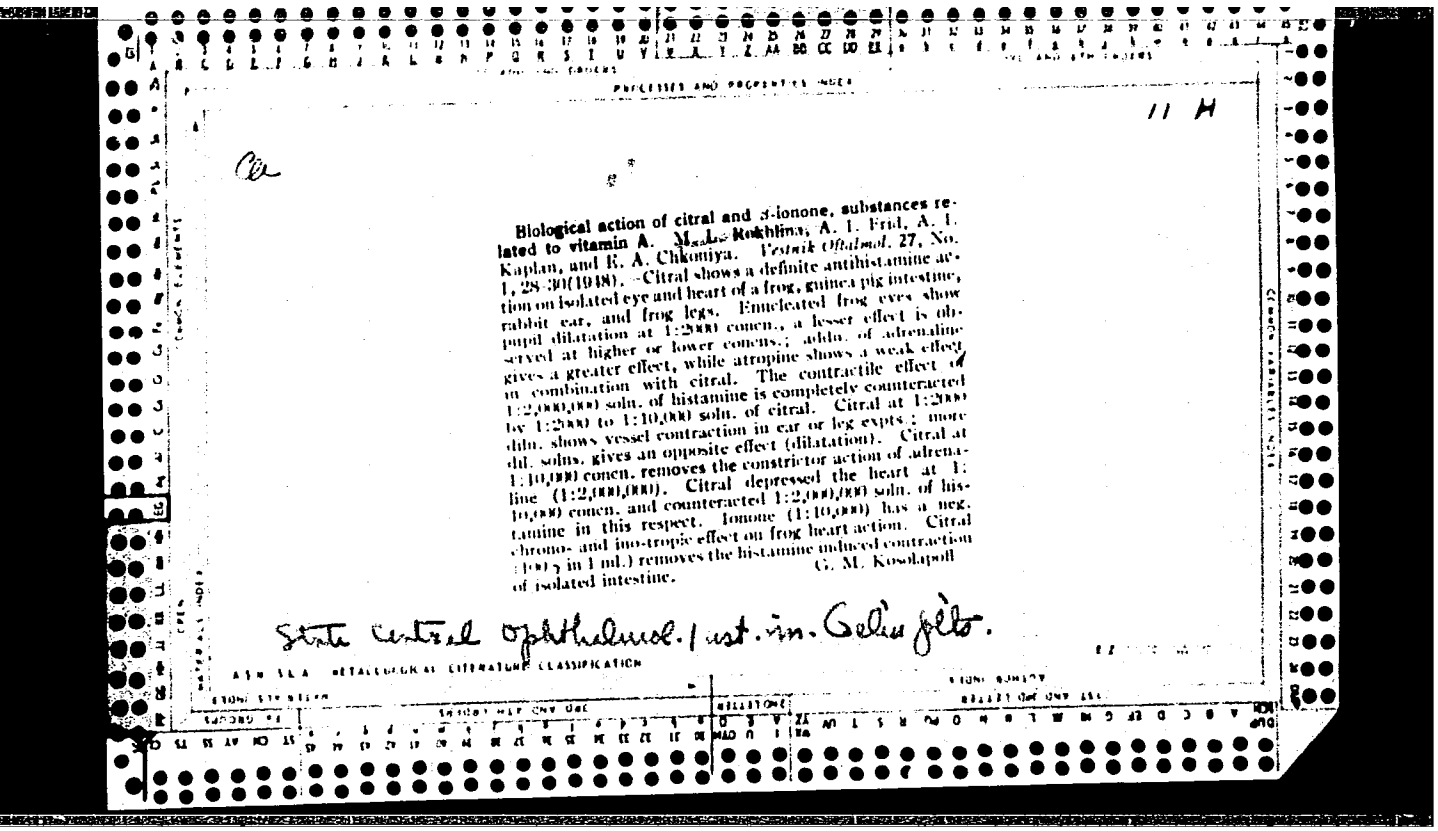
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

Changes of ascorbic acid content in the lens of the eye under the influence of riboflavin. M. L. Rukhlina and R. N. Yagudina. *Vestnik Oftal'mol.* 26, No. 6, 15–19 (1947).—Guinea pigs (300–330 g.) were sepd. into groups: (*a*) control, (*b*) given 100 mg. ascorbic acid daily for 2 weeks, (*c*) same as *b* using 50 mg., and (*d*) 50 mg. ascorbic acid and 5 mg. riboflavin daily. In no case were degenerative changes noted in the eyes. The high dosage of vitamin C and riboflavin failed to give a significant rise of C in the cornea. Control animals had almost no vitamin C in the lenses, and administration of even 100 mg. daily failed to yield appreciable levels. However, the combined C and riboflavin administration gave a sharp increase of C content in the lens. Thus, co-administration of C and B_2 is effective for concn. of C in the lens, while C alone is not effective even in very high doses. G. M. Kosolapoff

A58.51A METALLURGICAL LITERATURE CLASSIFICATION



11 H

Biological action of citral and β-ionone, substances related to vitamin A. M. [illegible] Rokhlina, A. I. Frid, A. I. Kaplan, and B. A. Chkoniya. *Vestnik Oftalmol.* 27, No. 1, 28–30(1948).—Citral shows a definite antihistamine action on isolated eye and heart of a frog, guinea pig intestine, rabbit ear, and frog legs. Enucleated frog eyes show pupil dilatation at 1:2000 concn., a lesser effect is observed at higher or lower concns.; addn. of adrenaline gives a greater effect, while atropine shows a weak effect in combination with citral. The contractile effect of 1:2,000,000 soln. of histamine is completely counteracted by 1:2000 to 1:10,000 soln. of citral. Citral at 1:2000 dilu. shows vessel contraction in ear or leg expts.; more dil. solns. gives an opposite effect (dilatation). Citral at 1:10,000 concn. removes the constrictor action of adrenaline (1:2,000,000). Citral depressed the heart at 1:10,000 concn. and counteracted 1:2,000,000 soln. of histamine in this respect. Ionone (1:10,000) has a neg. chrono- and ino-tropic effect on frog heart action. Citral (1:1 in 1 ml.) removes the histamine induced contraction of isolated intestine.

G. M. Kosolapoff

State Central Ophthalmol. Inst. in. Gelmgolts.

[redacted], M. L.

The Importance of the Michurin Doctrine," Fel'dsher i Akusher., No. 4, 1949;

Dr. of Biol. Sci. Prof.

[redacted], N. I.

"New Antihistamines - Citral and Beta Ionine," Sov. Med., No. 8, 1949;

Central Ophthalmological Inst., imeni Gel'mgrol'ts, -c1949-.

ROKHLINA, M. L., Prof.

PA 237T5

USSR/Medicine - Geriatrics Dec 52

"Extending the Duration of Life," Prof M. L. Rokhlina Dr Biol Sci

"Fel'dsher i Akusherka" No 12, pp 3-10

States US scientists engaged in inhuman activities and nefarious propaganda. In USSR, due to very favorable conditions, there are 30,000 people whose age exceeds 100 years. There are 2 kinds of old age, physiological (normal) and pathological, (premature). Pavlov's principles reveal the causes for premature old age, creating the possibility for successful efforts toward prolonging life. Pavlov and his pupils have established that the nervous system, particularly the cortex, the large hemispheres, and other systems connected with them play a significant part in the aging process. Pavlov stressed that systematic mental or physical work causes no exhaustion of the nervous system. Cells of the cortex have limits to their capacity, however. Overexertion results in exhaustion and breakdown of higher nervous activity, accompanied by disturbances in the function of internal organs of the organism. Conversely, malfunctioning of internal organs has an adverse effect on the nervous system. Contrary to the idea of some capitalist scientists, moderation will not prolong life if it is practiced under unfavorable social conditions.

(3)

237T5

ROKHLINA, M. L.

The significance of vitamin B2 for the visual analyser. M. L. Rokhlina (C. R. Acad. Sci., U.R.S.S., 1953, 90, 373—376). Freezing-microtome sections of retinæ of frogs given excess riboflavin (0·1 mg. in 6—10 days) showed bright yellowish-green fluorescence of the rods and cones in both light-adapted and dark-adapted states, and in the dark-adapted state of the pigment epithelium also. Frogs not given excess riboflavin showed no green fluorescence except for vitamin A in droplets in the pigment epithelium. Retinæ of rats on a normal diet sometimes showed a yellowish-green fluorescence in the rod and cone layer. This was absent in riboflavin-deficient rats and augmented in rats fed excess of riboflavin. Chemical estimations of riboflavin in whole rat retinæ showed that it was more abundant in the dark-adapted (mean 1·54 γ) than in the light-adapted (mean 0·63 μg.) state.

G. S. BRINDLEY.

State Scientific Research Institute of Eye Diseases, Moscow, U.S.S.R.

ROKHLINA, M. L.

ROKHLINA, M. L.

USSR/Medicine - Pharmacology

FD-2515

Card 1/1 Pub. 17-14/20

Author : Rokhlina, M. L.

Title : Amount of vitamin C in the tissues of the eye after its administration by electrophoresis or by subconjunctival injections

Periodical : Byul eksp biol i med. 4, 54-58 Apr 1955

Abstract : Investigated the efficacy of administration of vitamin C into the eye by electrophoresis and by subconjunctival injection. Compares change in amount of vitamin C in the eye of guinea pigs after above methods of administration. Photographs; table. Six references, all USSR (5 since 1940).

Institution : Scientific-Research Institute of Eye Diseases imeni Gel'mgol'ts

Submitted : May 12, 1954 by B. A. Lavrov, Member of the Academy of Medical Sciences USSR

ROKHLINA, M.L.

The influence of pantothenic acid and vitamin B_6-pyridoxine upon the regeneration of corneal epithelium. M. L. Rokhlina and T. V. Zubareva (Gel'mgolts Inst. Eye Diseases, Moscow). *Bynll. Exptl. Biol. i Med.* 40, No. 10, 58-60(1955).—Pantothenic acid and pyridoxine in suitable doses accelerate the regeneration of epithelium in corneal erosion. A. S. Mirkin.

(1)

[illegible], M.I.

Some characteristics of the course and clinical aspects of manic-depressive psychosis in old age. Zhur. nevr. i psikh. 65 no.4:567-574 '65. (MIRA 18:5)

1. Klinika psikhozov pozdnego vozrasta (zaveduyushchiy - doktor med. nauk E.Ya. Shternberg) Instituta psikhiatrii AMN SSSR, Moskva.

Rokhlina, M. L.

HD

The vitamin C content of the eye tissue after its introduction electrophoretically or through subconjunctival injection. M. L. Rokhlina (Gel'mgol'ts Sci. Research Inst. Eye Diseases). *Byull. Eksptl. Biol. i Med.* 39, No. 4, 54–8 (1955).—By using vitamin C-depleted guinea pigs as test animals and a histochem. method for quant. detn. of vitamin C it was found that the electrophoresis technique results in larger amts. of vitamin C in the cornea, sclerum, lens, corpus vitreum, and retina than by subconjunctival injection. Histochem. technique: The eye is fixed during 30 min. in the dark in 10% $AgNO_3$ (8 parts) acidified with 1% glacial AcOH, rinsed with distd. water, treated with 8% hyposulfite for 15–30 min., and rinsed again in the dark. Ag is pptd. in those cells which contain vitamin C. The no. of the Ag grains corresponds to the amt. of the vitamin present.

A. S. Mirkin

LFH

VANECEK, J.; KUCHEL, O.; VOHNOUT, S.; ROHLING, S.

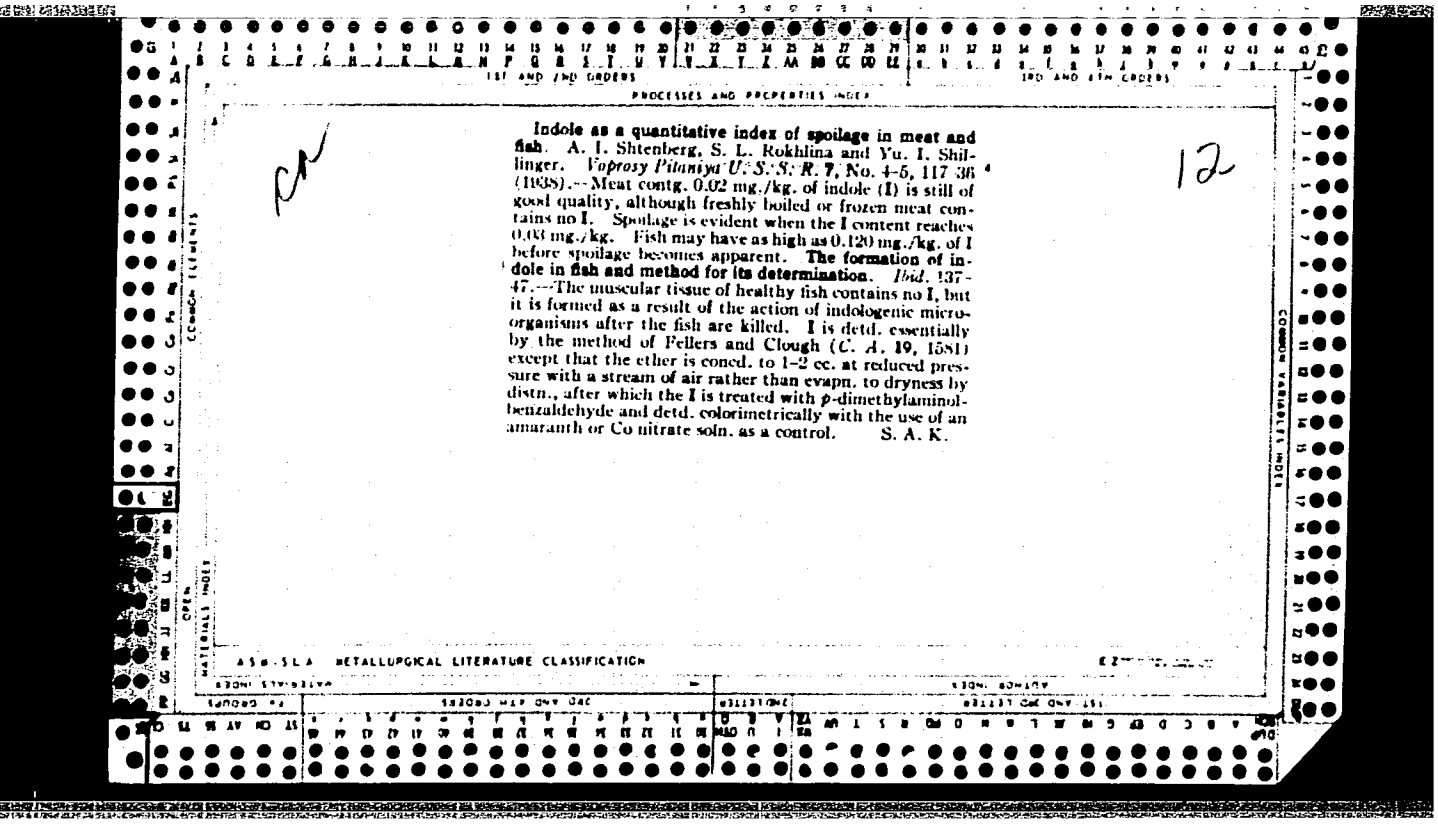
The control of humorally isolated circuits by means of isotopes.
Rev. Czech. M. 3 no.4:337-340 1957.

1. Chair of Pharmacology, Faculty of Paediatrics, Prague. Director: Prof. H. Raskova -- Third Clinic of Internal Diseases, Faculty of General Medicine, Prague, Director: Academician J. Charvat -- Institute of Endocrinology, Prague. Director: K. Silink.
(KIDNEYS, physiol.
eff. of pituitrin on interoceptors of isolated perfused cat kidney, mechanics & control of perfusion circuits.)
(PITUITARY GLAND, POSTERIOR, hormones
pitruitrin, eff. on interoceptors of isolated perfused cat kidney.)
(PERFUSION
mechanics & control of isolated perfusion circuits)

VOHTOUT,S.; ROHLING,S.; HAVELKA,J.

Dosimetric problems associated with the examination of thyroid function by means of radioiodine. Rev. czech. med. 10 no.1: 17-30 '64.

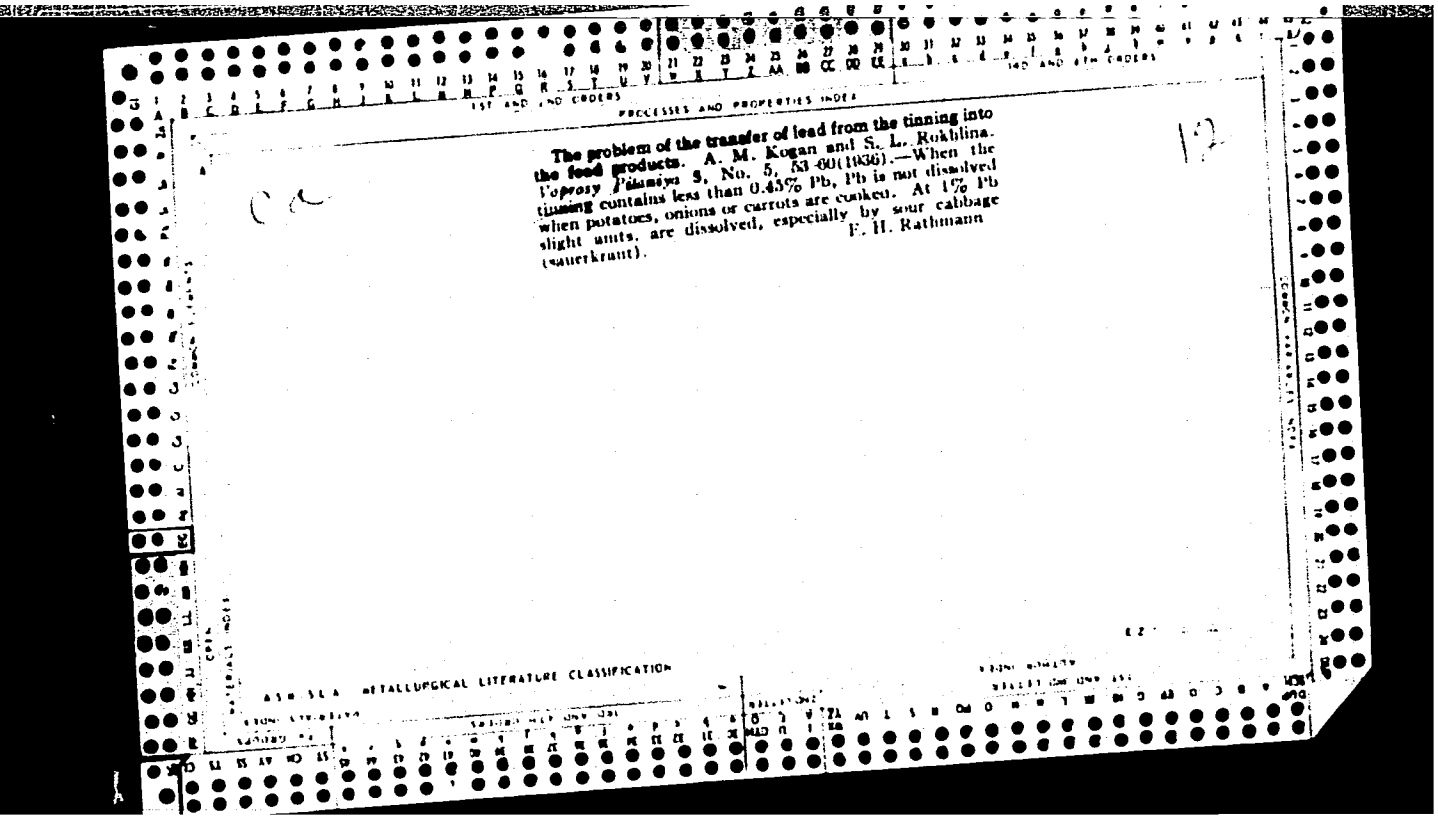
1. Research Institute of Endocrinology, Prague; director: doc. K.Silink, M.D.



PROCESSES AND PROPERTIES INDEX

Indole as a quantitative index of spoilage in meat and fish. A. I. Shtenberg, S. L. Rokhlina and Yu. I. Shillinger. *Voprosy Pitaniya U.S.S.R.* **7**, No. 4–5, 117–36 (1938).—Meat contg. 0.02 mg./kg. of indole (I) is still of good quality, although freshly boiled or frozen meat contains no I. Spoilage is evident when the I content reaches 0.03 mg./kg. Fish may have as high as 0.120 mg./kg. of I before spoilage becomes apparent. **The formation of indole in fish and method for its determination.** *Ibid.* 137–47.—The muscular tissue of healthy fish contains no I, but it is formed as a result of the action of indologenic microorganisms after the fish are killed. I is detd. essentially by the method of Fellers and Clough (*C. A.* **19**, 1581) except that the ether is concd. to 1–2 cc. at reduced pressure with a stream of air rather than evapn. to dryness by distn., after which the I is treated with *p*-dimethylaminobenzaldehyde and detd. colorimetrically with the use of an amaranth or Co nitrate soln. as a control. S. A. K.

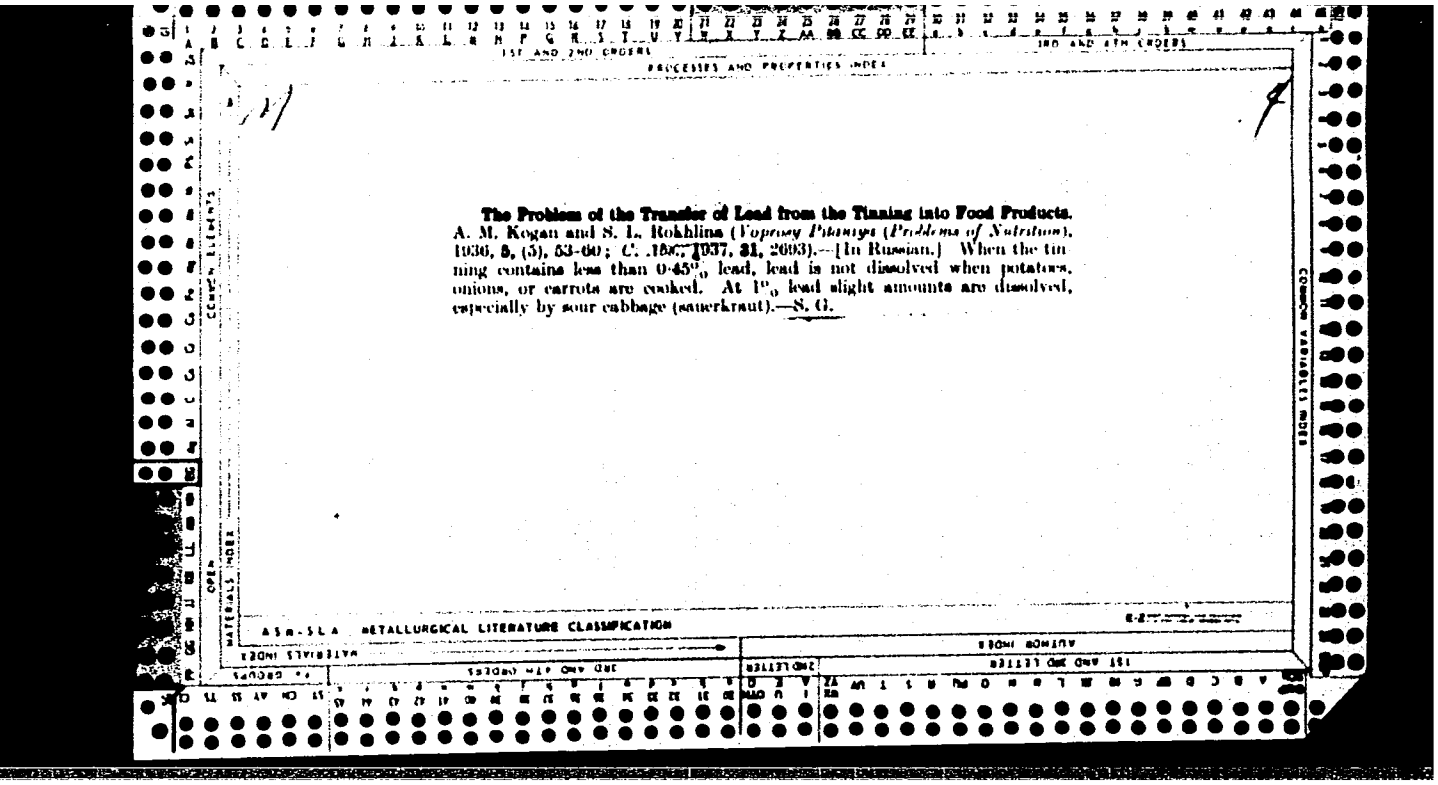
A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

The problem of the transfer of lead from the tinning into the food products. A. M. Kogan and S. L. Rokhlina. *Voprosy Pitaniya* **5**, No. 5, 53-60(1936).—When the tinning contains less than 0.45% Pb, Pb is not dissolved when potatoes, onions or carrots are cooked. At 1% Pb slight amts. are dissolved, especially by sour cabbage (sauerkraut). F. H. Rathmann

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION



The Problem of the Transfer of Lead from the Tinning into Food Products. A. M. Kogan and S. L. Rokhlina (*Voprosy Pitaniya* (*Problems of Nutrition*), 1936, **5**, (5), 53-60; *C.* 1937, **31**, 2003).—[In Russian.] When the tinning contains less than 0·45% lead, lead is not dissolved when potatoes, onions, or carrots are cooked. At 1% lead slight amounts are dissolved, especially by sour cabbage (sauerkraut).—S. G.

ROKHLIS, M.S.

State standard on gray iron castings. Lit.proizv. no.2:46 F '60. (MIRA 13:5)
(Iron founding--Standards)

ROKHLOV, B.G.

RAPOPORT, S.A.; ISTOMINA, M.M., nauchnyy sotrudnik; ROKHLOV, B.G., nauchnyy sotrudnik; BUZINA, G.V., nauchnyy sotrudnik.

Continuous process of producing sugar paste for confectioneries. (MLRA 7:8)
Trudy VKNII no.9:120-133 '54.
(Confectionery) (Pastry)