ZASLOVSKIY, Yu. S., SHOR, G. I., KIRIDLOV, I. G.: LEBEDEVA, F. B.; YEVSTIGNEYEV, Ya. V., and ZLOBIN, O. A.

"The Application of Radioactive Indicators (Tagged Atoms) in the Investigation of Wear Resistant Properties of Lubricating Oils." p. 58.

in book Study and Use of Petroleum Products, Moscow Gostoptekhizdat, 1957. 213 pp.
TRUDY VNII NP No.6.
Tish collection of articles gives results of scientific research work of the All-Union Scientific Research Inst. for the Processing of Petroleum and Gas for the Production of Synthetic Liquid Fueld.

ZLOBIN, O.A.; YEVSTIGNEYEV, Ye.V.; KADUSHIN, A.A.; SHOR, G.I.

Automatically maintaining the separation level of media of
different densities. Khim. i tekh.topl. i masel 4 no.1:20-24
Ja '59.   (MIRA 12:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftyanoy
promyshlennosti.
 (Radioisotopes--Industrial applications) (Petroleum--Refining)

YEVSTIGNEYEV, YE. V.

5

S/081/62/000/005/096/112
B160/B138

11.9700

AUTHORS: Zaslavskiy, Yu. S., Shor, G. I., Shneyerova, R. N.,
Lebedeva, F. B., Morozova, I. A., Ryabova, D. V.,
Stukin, A. D., Yevstigneyev, Ye. V., Yurchenko, P. F.,
Nizhnik, V. Ya.

TITLE: Radioactive tracer methods for studying the functional
properties of oils with additives

TEXT: A short description is given of the radioactive tracer method
developed in the VNIINP for studying electrokinetic processes connected
with the mechanism of the action of certain dispersive additives for
heavy diesel lubricating oils. A diagram of the experimental equipment
is given. Its main feature is the combined use of radiation counters as
electrodes for producing the electric field and for recording the movement
of the labelled dispersed phase. Soot with the radioactive isotope Tl^{204}

Card 1/2

S/081/62/000/005/096/112
B160/B138

Radioactive tracer methods for...

was used to model the dispersed phase (oil oxidation and fuel combustion products). In the radioisotope method of studying the detergent properties of oils with additives the amount of gummy deposit was measured from the absorption of Co^{60} beta radiation in it. The method of studying the detergent properties of oils with additives, based on the oxidation of a thin layer of oil on a heated strip of steel, has been improved by radiometric measurement of the deposits, using Ca^{45} as a source. The chemical activity of antiscoring additives was estimated by determining the kinetics of the transitions from radioactive steel (irradiated with neutrons via Fe^{59}) or copper (activated by introducing tracer amounts of Ag^{110} into molten copper) to the oil, under the influence of the test additives. [Abstracter's note: Complete translation]

Card 2/2

ZASLAVSKIY, Yu. S.; SHOR, G. I.; MOROZOVA, I. A.; LEBEDEVA, F. B.; YEVSTIGNEYEV, Ye. V.; SHNEYEROVA, R. N.

"New methods of investigation of lubricant properties."

report submitted for Intl Lubrication Conf, Washington, D.C., 13-16 Oct 64.

KOGAN, Grigoriy Il'ich; YEVSTIGNEYEV, Yu.A., kand. tekhn. nauk,
retsenzent; LESNICHENKO, I.I., red. izd-va; CHERNOVA, Z.I.,
tekhn. red.; DEMKINA, N.F., tekhn. red.

[Manufacture of spur gears with ground teeth] Izgotovlenie tsi-
lindricheskikh koles so shlifovannymi zub'iami. Moskva, Mashgiz,
1962. 238 p.   (MIRA 15:6)
                         (Gear cutting)

YEUSTIGNEYEV, YU.F.

56-6-8/56

AUTHOR

TITLE

VAVILOV, Yu.N., YEVSTIGNEYEV, Yu.F., NIKOL'SKIY, S.I.
Investigation of the Penetrating Component of Extensive Cosmic
Ray Air Showers (-Russian)
(Issledovaniye pronikayushchey komponenty shirokikh atmosferiches-
kikh livney kosmicheskogo izlucheniya -Russian)

PERIODICAL

Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 32, Nr 6, pp 1319-1327
(U.S.S.R.)

ABSTRACT

The present paper investigates the spatial distribution of myons
in broad atmospheric showers, which are caused by primary particles
with different energy. These measurements were carried out in an al-
titude of 3860 m (Pamir) in the summer and fall of 1954.
Experimental order: The spatial distribution of the charged partic-
les was investigated by the method of the individual investigation
of the showers by means of numerous counters (which were connected
with a hodoscopic device). The general scheme of the experimental
order is illustrated by means of a drawing.
The spatial distribution of Myons in the shower: The density of the
myon flux in the showers investigated did not suffice for measuring
them in an individual shower if detectors with the usual surface
area are used. The mean value of the density of the myon flux in the
showers with assumed number of particles was determined by counting
the myon passages through the detector. The varying influence exer-
cised by the angle of emission of the pions upon the spatial distri-
bution of the soff and the penetrating component of the broad atmo-

Card 1/2

Investigation of the Penetrating Component of Extensive   56-6-8/56
Cosmic Ray Air Showers.   ~~XXXXXXXX~~

spheric showers is obviously connected with two factors.Firstly,
the myons have considerably longer ranges than the electron-photon
avalanches.On the other hand the form of the function of the spat-
ial distribution of the electrons near the axis of the shower in-
dicates a considerable influence exercised by neutral pions with
an energy of $> 10^{10}$ EV upon the production of the electron-photon
component in the depth of the atmosphere.
The last chapter deals with the dependence of the number of myons
in a broad atmospheric shower on the energy of the primary partic-
le causind the shower.
(5 illustrations and 2 tables).

ASSOCIATION   Not Given.
PRESENTEDBY
SUBMITTED   12.1.1957
AVAILABLE   Library of Congress.
Card 2/2

S/121/60/000/006/006/008

AUTHOR: Yevstigneyev, Yu. I.

TITLE: Three-Component Milling Dynamometer

PERIODICAL: Stanki i Instrument, 1960, No. 6, pp. 31-32

TEXT: The author describes a three-component milling dynamometer, designed and made by the Kafedra "Rezaniye, stanki i instrument" Kazanskogo aviatsionnogo Instituta (Department "Cutting, Machine Tools and Tools" of the Kazan' Aviation Institute), which makes it possible to measure the three components of cutting forces directly at the cutting edge of the tool. This dynamometer ensures steadiness of reading, eliminates the reciprocal effects between the components of the cutting forces on its reading and reduces hysteresis to zero. The author gives a description of the design and operation of the device pointing out that, although the tests were carried out at low cutting speeds, owing to the fact that heat-proof alloys were tested, it stands to reason to presume that the dynamometer can also be used at higher speeds. There are: 1 diagram, 1 circuit diagram, 1 oscillogram and 5 Soviet references.

Card 1/1

ACCESSION NR: AR4027676   S/0276/64/000/001/B160/B160

SOURCE: RZh. Tekhnologiya mashinostroyeniya, Abs. 1B1034

AUTHOR: Yevstigneyev, Yu. I.

TITLE: Thoretical and experimental study of the the dynamics of milling the ends
of heat-resistant alloys

CITED SOURCE: Tr. Kazansk. aviats. in-ta, vy*p. 74, 1963, 3-10

TOPIC TAGS: heat-resistant alloy, alloy machining, alloy milling, end milling,
butt end milling

TRANSLATION: The author presents the results of theoretical and experimental
studies of the maximum forces acting on the cutter during butt-end milling of
heat-resistant alloys EI-437B and EI-617. Also included is a formula for
determining the circumference force. 4 illustrations, 2 tables, bibliography
with 7 titles. S. Avrutin.

DATE ACQ: 03Mar64   SUB CODE: ML   ENCL: 00

Card 1/1

S/2529/63/000/074/0003/0010

ACCESSION NR: AT4035379

AUTHOR: Yevstigneyev, Yu. I.

TITLE: Theoretical and experimental study of the dynamics of face milling of heat resistant alloys

SOURCE: Kazan. Aviatsionny*y, Institut. Trudy*, no. 74, 1963. Aviatsionnaya tekhnologiya i organizatsiya proizvodstva (Aeronautical technology and organization of production), 3-10

TOPIC TAGS: milling, face milling, milling dynamics, alloy milling, heat resistant alloy, alloy EI-437B, alloy EI-617, lathe operation, cutting tool property

ABSTRACT: Very little theoretical or experimental work has been done on the dynamics of face milling where high temperature alloys are involved. The author therefore investigated the maximum forces acting on the front and back faces of the cutting tool during face milling of alloys EI-437B and EI-617. The forces acting on the front face of a cutting tool were estimated from the formula of A. M. Rozenberg

$$P_1 = 0.185 H_u \cdot s \cdot t \frac{K^2 - 2K \sin \gamma + 1}{K \cos \gamma \left[1 - \frac{\sin \gamma}{K \cos (\eta - \gamma)}\right]}$$

(1)

Card 1/4

ACCESSION NR: AT4035379

where P_1 is the force acting in the direction of the cutting speed, s·t is the cross section of the shear, K is the chip setting coefficient, γ is the front rake angle, η is the friction angle on the front face of the tool, and H_B is the Brinell hardness of the chip in the zone of primary deformation. The forces acting on the back face of the tool, which must be considered when the feed rate does not exceed 0.15 mm/rev. due to the elasticity of the strain hardened material under the tool, were calculated by a modification of the formula of L. A. Galin:

$$N = \frac{p(x)\pi \cdot a \cdot b}{2}\sqrt{\frac{a-x}{x}} \tag{2}$$

where $p(x)$ is the pressure distribution underneath the ram, a and b are the width and length of the contact zone, and high-pressure plastic deformation is not considered. The theoretical results were then confirmed by experiments with a polished sheet of EI-437B steel, pressed with a ram having an angle of inclination of the face of 7° and a rounding radius of 0.02 mm, at pressures of 200-700 kg. The actual pressure under the ram was determined from the microhardness of the part and was dependent on the stamping angle as shown in Fig. 1 of the Enclosure. Further experiments were carried out to determine the force during turning of EI-437B steel on a lathe, using an electroinductive dynamometer. The final conclusion is that the resultant circumferential force during face milling can be

Card 2/4

ACCESSION NR: AT4035379

expressed as $P_t = P_1 + \mu N$ where μ is the coefficient of friction between the back face of the tool and the machined surface. "The work was carried out under the guidance of M. E. Itkin (Candidate in the Technical Sciences)." Orig. art. has: 4 figures, 3 tables and 6 formulas.

ASSOCIATION: Kafedra "Rezaniye, stanki i Instrumenty" Kazanskogo aviatsionnogo Instituta (Department of Cutting, Machine Tools and Instruments, Kazan Institute of Aviation)

SUBMITTED: 08Dec62   DATE ACQ: 22May64   ENCL: 01

SUB CODE: MM   NO REF SOV: 007   OTHER: 000
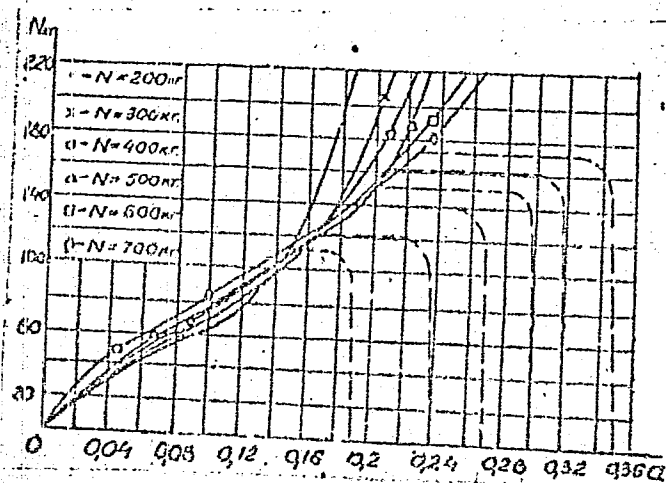
Card   3/4

ACCESSION NR: AT4035379

Fig. 1. Distribution of pressure under an oblique ram at various loads (H).

Card 4/4

SUKHANOVSKIY, S.I.; AKHMINA, Ye.I.; YEVSTIFEYEVA, E.B.; KHARLAMOVA, M.V.

Chemical composition of the organic and ash parts of hydrolysis lignins. Gidroliz. i lesokhim. prom. 18 no.5:15-17 '65.

(MIRA 18:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidroliznoy i sul'fitno-spirtovoy promyshlennosti.

YEVSTIGNEYEVA, I.S.

History and present state of theoretical arithmetic at schools
and pedagogical institutes. Uch.zap.Ivan.gos.ped.inst. 34:103-
123 '64.   (MIRA 18:4)

FEDOTIKOV, Aleksandr Petrovich; YEVSTIGNKYEVA, I.V., red.; TARAKANOVA, I.I., tekhn.red.

[Concise handbook for mechanical engineers] Kratkii spravochnik tekhnologa-mashinostroitelia. Moskva, Gos.izd-vo ohor. promyshl., 1957. 253 p.   (MIRA 11:5)
          (Mechanical engineering--Handbooks, manuals, etc.)

ANDREYEV, Vitaliy Semenovich; GUREYEV, Petr Antonovich; YEVSTIGNEYEVA, L.A.,
    red.; TIMOFEIEVA, N.V., tekhn. red.

[Organized recruitment of workers in the U.S.S.R.] Organizovannyi
nabor rabochikh v SSSR. Moskva, Gos.izd-vo iurid.lit-ry, 1960.
78 p.   (MIRA 14:6)
                    (Contract labor)

SHEFER, L.B.;YEVSTIFEYEVA, L.A.

Methodology of determining 17-ketosteroids in urine.
Lab. delo no. 11:679-681 '64.   (MIRA 17:12)

1. Institut tuberkuleza (direktor- kand.med.nauk A.A.Terlikbayev)
Ministerstva zdravookhraneniya Kazakhskoy SSR, Alma-Ata.

KISELEV, Yakov L'vovich; CHURIN, Vyacheslav Nikolayevich; YEVSTIGNEYEVA,
L.A., red.; TIMOFEYEVA, N.V., tekhn. red.

[Industrial hygiene and safety measures; collection of the most
important decrees and regulations] Okhrana truda i tekhnika
bezopasnosti; sbornik vazhneishikh postanovlenii i pravil. Mo-
skva, Gos. izd-vo iurid. lit-ry, 1961. 493 p.   (MIRA 14:9)

1. Russia (1923- U.S.S.R.) Laws, statutes, etc.
        (Industrial hygiene--Law and legislation)
        (Industrial safety--Law and legislation)

LEVIN, M.S., kand. tekhn. nauk; SMETANICH, Ya.S., kand. fizik-matematich. nauk; GRIMBLIT, I.B., inzh.; YEVSTIGNEYEVA, L.P., inzh.

Economic evaluation of the configuration of a power distribution network using an electronic digital computer. Elek. sta. 34 no.5: 51-54 My '63.   (MIRA 16:7)

(Electric power distribution)
(Electronic digital computers)

YEVSTIGNEYEVA, M. F.

Dissertation: "Data on the Pathological Anatomy of the Central Nervous System
in Certain Cardiac Diseases (Myocardial Infarcts, Rheumatism)." Cand Med Sci,
Second Moscow State Medical Inst imeni I. V. Stalin, 6 Sep 54. (Vechernyaya
Moskva, Moscow, 19 Aug 54)

SO: SUM 393, 28 Feb 1955

RITOVA, V.V.; YEVSTIGNEYEVA, N.A.

Vaccinal strains of influenza viruses. Vop. virus. 5 no. 2:172-
176 My-S '60.   (MIRA 14:4)

1. Institut virusologii imeni D.I. Ivanovskogo, Moskva.
                    (INFLUENZA)

YEVSTIGNEYEVA, N.A., RITOVA, V.V.

"Live tissues vaccine against influenza."

Report submitted for the 1st Intl. Congress on Respiratory Tract
Diseases of Virus and Rickettsial Orgin. Prague, Czech.
23-27 May 1961.

ZHDANOV, V.M.; RITOVA, V.V.; GEFEN, N.Ye.; ZHUKOVSKIY, A.M.;
        BERLYANT, M.L.; YEVSTIGNEYEVA, N.A.; YEGOROVA, N.B.; KREYNIN,
        L.S.; LEONIDOVA, S.L.; SERGEYEV, V.M.; SMIRNOV, M.S.

Comparative study of intranasal and aerosol methods of
vaccination against influenza. Zhur. mikrobiol., epid. i
immun. 33 no.11:63-67 N '62.   (MIRA 17:1)

1. Iz Instituta virusologii imeni Ivanovskogo AMN SSSr.

RITOVA, V.V.; ZHUKOVSKY, A.M. [Zhukovskiy, A.M.]; YEVSTIGNEYEVA, N.A.

Comparative study of the immunological properties of live
influenza vaccine in volunteers. J.hyg.epidem. 7 no.3:272-280
'63.

1. Ivanovsly Institute of Virology, Academy of Medical Sciences
of the U.S.S.R., Moscow.

*

SHUBLADZE, A.K.; ANAN'YEV, V.A.; NARSKIY, S.V.; BARINSKIY, N.F.;
    KAVERIN, N.V.; YEVSTIGNEYEVA, N.A.

Some results of studying virus strains isolated from epi-
demic hepatitis patients. Vest. AMN SSSR 18 no.6:49-55 '63.
                                            (MIRA 17:1)

VIOLOVICH, N.A.; YEVSTIGNEYEVA, N.S.

Ecology of deer fly in the forest steppe zone of Western Siberia.
Izv. SO AN SSSR no.4 Ser. Biol.-med. nauk no.1:106-110 '64.
(MIRA 17:11)

1. Institut biologii Sibirskogo otdeleniya AN SSSR, Novosibirsk.

44361
S/044/62/000/012/019/049
A060/A000

$16,3000$

AUTHORS: Kostenko, V.O., Yevstaf'yeva, N.V.

TITLE: Certain differential equations invariant with respect to groups of transformations

PERIODICAL: Referativnyy zhurnal, Matematika, no. 12, 1962, 62, abstract 12B276
(Zb. robit. aspirantiv Mekhan.-matem. ta fiz. fak. L'vivs'k. un-t,
1961, no. 1, 100 - 104; Ukrainian)

TEXT: The authors consider nonlinear equations of the form   (1)
$$\Omega = \Delta u - \varphi(x, y) \cdot F(u) = 0 ,$$
which are invariant with respect to infinite continuous groups of translations.
Let
$$Uf = \xi(x, y, u)\frac{\partial f}{\partial x} + \eta(x, y, u)\frac{\partial f}{\partial y} + \zeta(x, y, u)\frac{\partial f}{\partial u}$$ (2)
be an arbitrary operator,
$$U''f = \xi\frac{\partial f}{\partial x} + \eta\frac{\partial f}{\partial y} + \zeta\frac{\partial f}{\partial u} + \alpha_1\frac{\partial f}{\partial p} + \alpha_2\frac{\partial f}{\partial q} + \beta_1\frac{\partial f}{\partial r} + \beta_2\frac{\partial f}{\partial s} + \beta_3\frac{\partial f}{\partial t},$$ (3)

Card 1/3

Certain differential equations invariant with ....

where

$$\alpha_1 = \frac{d\xi}{dx} - p\frac{d\xi}{dx} - q\frac{d\eta}{dx}, \quad \alpha_2 = \frac{d\xi}{dy} - p\frac{d\xi}{dy} - q\frac{d\eta}{dy}, \quad \beta_1 = \frac{d\alpha_1}{dx} - r\frac{d\xi}{dx} - s\frac{d\eta}{dx},$$

$$\beta_2 = \frac{d\alpha_1}{dy} - r\frac{d\xi}{dy} - s\frac{d\eta}{dy} = \frac{d\alpha_2}{dx} - s\frac{d\xi}{dx} - t\frac{d\eta}{dx}, \quad \beta_3 = \frac{d\alpha_2}{dy} - s\frac{d\xi}{dy} - t\frac{d\eta}{dy}$$

is a twice continued operator from operator (2). As follows from the work (RZhMat,
1962, 2B260) the differential equation (1) will be invariant with respect to
translations if and only if

$$U'' \Omega = 0. \tag{4}$$

The set of translations which leaves the differential equation invariant always
represents a closed group. Investigating (4) with $\varphi(x, y) = 1$, the authors ob-
tain for the transformation coefficients the system of differential equations:

$$\frac{\partial\xi}{\partial x} = \frac{\partial\eta}{\partial y}; \quad \frac{\partial\xi}{\partial y} = -\frac{\partial\eta}{\partial x}, \quad \frac{\partial\xi}{\partial u} = \frac{\partial\eta}{\partial u} = 0; \quad \frac{\partial^2\zeta}{\partial x \partial u} = \frac{\partial^2\zeta}{\partial y \partial u} = \frac{\partial^2\zeta}{\partial u^2} = 0;$$

$$\zeta\frac{dF}{du} - F(u)\left(\frac{\partial\zeta}{\partial u} - 2\frac{\partial\xi}{\partial x}\right) = \frac{\partial^2\zeta}{\partial x^2} + \frac{\partial^2\zeta}{\partial u^2}. \tag{5}$$

Card 2/3   I] NOT SELECTED

Certain differential equations invariant with ....

Then the authors restrict themselves to the case of nonlinear equations, which are invariant with respect to infinite continuous groups of transformations. (5) implies that ξ and η are harmonic conjugate functions of the variables x and y and do not depend on u; $\xi = cu + \xi_1 (x, y)$; substituting ξ in (5) and considering (5) as an identity in u we obtain: Theorem 1. To have the equation $\Delta u = F (u)$ be invariant with respect to an infinite continuous groups of translations, it is necessary and sufficient that $F (u) = p \cdot e^{ku}$, where p is defined in (3), and k is a constant. Theorem 2. For the nonlinear equation (1) with $\varphi (x, y) \neq$ const to be invariant with respect to an infinite continuous group of translations, it is necessary and sufficient that

$$\varphi (x, y) = \pm e^{\psi (x, y)}, \quad F (u) = e^{ku},$$

where $\psi (x, y)$ is any harmonic function, and k is any constant. I.N. Vekua's hypothesis (RZhMat, 1962, 2B260) as to the fact that, to find the general solution of the equation $\Delta u = \varphi (x, y) e^{u}$, it is sufficient to know that one of its particular solutions is confirmed from the viewpoint of group sets only for the case when $\varphi (x, y) = \pm | w (z) |$, where $w (z)$ is any analytic function of the variable $z = x + iy$.

[Abstracter's note: Complete translation]

A.S. Fokht

Card 3/3

YEVSTATIEV, D., inzh.; MINKOV, M., inzh.

    Application of soil cement in building. Tekh delo 13 no.427:
    3 19 My '62.

PONOMARENKO, A.V., kand.biolog.nauk; YEVSTIFEYEV, M.F., agronom-entomolog

From the experience obtained in Rostov Province in the protection
of corn against wireworms. Zashch. rast. ot vred. i bol. 6 no.5:
17-18 My '61.   (MIRA 15:6)

1. Kafedra zoologii bespozvonochnykh i entomologii Rostovskogo
universiteta.
          (Rostov Province—Corn (Maize)—Diseases and pests)
               (Rostov Province—Wireworms)

SEMENIKHIN, I.V.; YEVSTIGNEYEV, R.I.

    Shaving gears on parallel axles. Av.prom. 26 no.8:88-89 Ag '57.
                                                          (MIRA 15:4)
                        (Gear cutting)

YEVSTIGNEYEV, V.P.

Problems in the coordination of economic research. Vest. AN
SSSR 32 no.3:99-101 Mr '62.   (MIRA 15:2)
   (Economic research--Congresses)

ANAN'YEV, V.A.; SHUBLADZE, A.K.; NARSKIY, S.V.; BARINSKIY I.F.; KAVERIN, N.V.;
YEVSTIGNEYEVA, N.A.

Study of the etiology of Botkin's epidemic hepatitis. Vop.med.
virus. no.9:3-8 '64.   (MIRA 18:4)

YEVSTIGNEYEVA, R.P.

Synthesis of the alkaloid emetine. R. P. Evstigneeva, R. S. Livshits, L. I. Zakharkin, M. S. Ilinova, and N. A. Preobrazhenskii. *Doklady Akad. Nauk S.S.S.R.* 75, No. 4, 539-42(1950).—The structure of *emetine* is proved by the following synthesis. Hydrogenation over Ni or Pt oxide of a mixt. of Et β-(1-cyanopropyl)glutarate and homoveratrylamine (I) (excess) leads to addn. of the latter to the CN group with subsequent loss of NH₃ and the interaction of the secondary amine group with one of the CO₂Et groups, closing the ring by an amide link to yield the compd. A; addn. of I and heating A to 190-200° yields the compd. B,
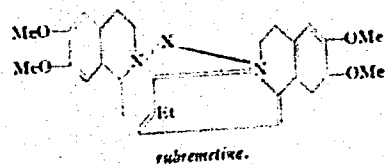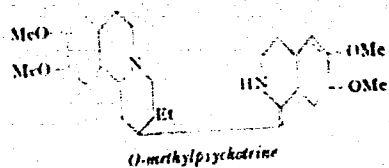

(A)

(B)

(C)
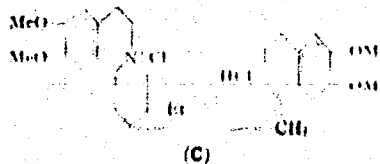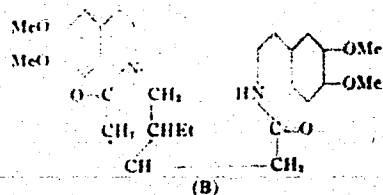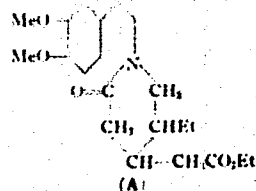
which with POCl₃ yields the compd. C, whose HCl salt on hydrogenation over Pt catalyst yields 4',5'-dimethoxy-6-ethyl-7-(6″,7″-dimethoxy-1″,2″,3″,4″-tetrahydro-1″-isoquinolylmethyl) - 1,4,5,6,7,8 - hexahydro(1,2:1′,2′)benzoquinolizine, i.e. *emetine*, identical with the natural product. The alkaloid was also prepd. by condensation of the above cyano ester with homoveratrylamine to yield B, which was treated as above; alternatively, A was cyclized and treated with KI, yielding the *iodide* of the Et ester of 6′,5′-dimethoxy-6-ethyl-1,4,5,6,7,8-hexahydro-(1′,2′:1,2)-benzoquinolizine-7-acetic acid, which on reduction, reductive alkylation with homoveratrylamine, and cyclization also gave emetine. Some intermediates are characterized: Et β-[1-(bromomethyl)propyl]glutarate, m. 132.5-3.5°; anhydride of β-(1-diethylacetal)propyl]glutaric acid, b₅ 155-7°; β-carboxymethyl-γ-ethyl-δ-valerolactone, m. 102.5-3.5°, b₆ 170-3°; Et

CA

β-(1-cyanopropyl)glutarate, b.₁ 139–40°. The synthetic emetine gives the same characteristic reactions as the natural product and when heated with iodine in EtOH yields rubremetine iodide, m. 170–80°, identical with the product from natural emetine. Hence, the following related alkaloids are probably as shown:

cephaeline

psychotrine

O-methylpsychotrine

rubremetine.
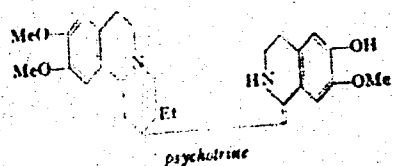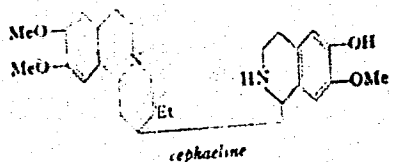
G. M. Kosolapoff

1951

YEVSTIGNEYEVA, R. P.

"Synthesis of Emetine Alkaloid." Sub 26 Mar 51, Moscow Inst of Fine Chemical Technology imeni Lomonosov. *Cand Chem Sci*

Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 480, 9 May 55

YEVSTIGNEYEVA, R. P.

191T32

USSR/Chemistry - Pharmaceuticals   Jul 51

"Investigation Into a Series of Isoquinoline Compounds. IV. Synthesis of 1-β-(β'-Pyridyl)-Ethyl-7-6,7'-Dimethoxy-1,2,3,4-Tetrahydroisoquinoline," R. S. Livshits, R. P. Yevstigneyeva, M. S. Mayeva, N. A. Preobrazhenskiy, Moscow Inst Fine Chem Technol imeni M. V. Lomonosov

"Zhur Obshch Khim" Vol XXI, No 7, 1360-1364

Synthesized over intermediate compds (many not earlier described in literature) isoquinoline derivs listed above, opening way to synthesis of analogues of emetine close to it in structure.

191T32

USSR/Chemistry - Pharmaceuticals (Contd)   Jul 51

Footnote states that subsequent to submission of article to editors (30 Mar 49) above authors and L. Zakharkin completed synthesis of emetine, establlshed its constitution as 4',5'-dimethoxy-6-methyl-7-(1"-methyl-6",7"-dimethoxy-1",2",3",4"-tetrahydroisoquinolyl)-3,4,5,6,7,8,9,10-octahydro-1,2:1',2'-benzoquinolidine (structural formula is shown), which differs from constitution proposed by Brindley and Pyman.

191T32

USSR/Chemistry - Alkaloids

21 Nov 51

"Synthetic Research in the Series of Alkaloids of Ipecac and Cinchona," N. A. Preobrazhenskiy, R. P. Yevstigneyeva, T. S. Levchenko, K. M. Fedyushkina

"Dok Ak Nauk SSSR" Vol LXXXI, No 3, pp 421-425

The steps in the synthesis of substances leading to alkaloids of the emetine group had been described. Glutaconic acid ester and alkyl-substd cyanoacetic esters were the starting materials. Also presents a parallel scheme for a synthesis starting with the diethyl ester of alpha, beta-dihydromuconic acid. This opens the way to the synthesis of quinine over homoeroquinene. In

214T18

General the procedures described permit syntheses of compds contg meroquinene and homomeriquinene groupings (also of corresponding dihydro compds), thus leading to ipecacuanana and cinchona alka-loids.

214T18

YEVSTIGNEYEVA, R. P.

YEVSTIGNEYEVA, R.P.

(6)

Isoquinoline compounds. V. Synthesis of the natural alkaloid, emetine. R. P. Evstigneeva, R. S. Livshits, S. D. Balnova, L. I. Zakharkin, and N. A. Preobrazhenskii (Moscow Inst. Fine Chem. Technol.). J. Gen. Chem. U.S.S.R. 22, 1511-10(1952)(Engl. translation).—See C.A. 47, 5049c.   H. I. II.

AF
7-27-54

YEVSTIGNEYEVA, R. P.

hemical Abst.
ol. 48 No. 3
'eb. 10, 1954
rganic Chemistry

(8) Chem II

Isoquinoline compounds. VII. Synthesis of 3-[(1,1-diethoxymethyl)propyl]glutaric acid. M. S. Balmova, R. P. Evstigneeva, R. S. Livshits, K. K. Kuz'mina, and N. A. Preobrazhenskii (M. V. Lomonosov Inst. Fine Chem. Technol., Moscow). Zhur. Obshchei Khim. 23, 119–32 (1953); cf. C.A. 47, 7507i.—Heating 60 g. PrCHO, 87 g. $CH_2(CO_2H)_2$, 40 ml. pyridine, and a few drops piperidine 3 hrs. at 60–70° and 3 hrs. at 110° gave 70% $PrCH:CHCO_2H$, b. 98–102°, m. 34–5°. Heated with EtOH and H_2SO_4 it gave 76% Et ester, b. 174–5°. This (80 g.) and 50 g. HCO_2Et added to 13 g. Na in 400 ml. MeOH and allowed to stand 1 day gave a ppt. of Na deriv. of $EtCH(CHO)CH:CHCO_2Et$, which treated with ice, the aq. soln. extd. with CaH_2 and the aq. layer acidified with H_3PO_4 to Congo red and extd. with Et_2O gave, on evapn. of Et_2O, 54% crude $EtCH(CHO)CH:CHCO_2Et$ (I); this distd. in N atm. in the presence of a little urotropin, b. 65–70°, d_4^{20} 1.0412, n_D^{20} 1.4648; the product gives violet color with $FeCl_3$ and its MR_D indicates that it is nearly all oxo form. The product tends to polymerize on repeated distn. The Na deriv. of the above ester (11 g.), 12 g. abs. EtOH, and 45 ml. Et_2O satd. with HCl (4.6 g. added) were stirred with cooling 2 hrs., then 14 hrs. at room temp., neutralized with $NaHCO_3$, filtered, and distd., yielding 30.6% $EtC(:CHOEt)CHCl\cdot CH_2CO_2Et$ (II), b. 68–78°, d_4^{20} 0.9927, n_D^{20} 1.4450. I (5 g.) and 4.35 g. $HC(OEt)_3$, treated with 0.1 g. NH_4Cl in 3 ml. abs. EtOH and heated on steam bath 30 min., allowed to stand overnight, decanted and the soln. treated with 2 vol. Et_2O and washed with 5% NH_4OH gave on distn. of the org. layer 35.0% $EtCH[CH(OEt)_2]CH:CHCO_2Et$ (III), b. 76–81°. To EtONa from 4 ml. EtOH and 0.22 g. Na was added at 30–40° 3 g. $CH_2(CO_2Et)_2$, kept 30 min. and treated with 2 g. II and heated 6 hrs.; after concn. and treatment with H_2O the org. layer gave 55.7% $EtC(:CHOEt)CH[CH(CO_2Et)_2]CH_2CO_2Et$, b. 148–9°. To 0.6 g. Na in 10 ml. EtOH was added 7.8 g. $CH_2(CO_2Et)_2$ and 6 g. III and heated on water bath 5 hrs.; after usual aq. treatment there was obtained 43.3% $EtCH[CH(OEt)_2]CH[CH(CO_2Et)_2]CH_2CO_2Et$, b. 160–3°. This (5.5 g.) refluxed with 4.6 g. KOH, 45 ml. H_2O and 45 ml. MeOH 5 hrs., concd.,

(over)

chilled, acidified with HCl and extd. with Et$_2$O gave 37% EtCH[CH(OEt)]CH(CH$_2$CO)$_2$O, b$_1$ 155-7°. VIII. Condensation of substituted β-propylglutaric acids with homoveratrylamine. (L. I. Zakharkin and N. A. Preobrazhenskii (M. B Lomonosov Inst. Fine Chem. Technol., Moscow). Ibid. 153-5.—Letting 4.5 g. γ-ethyl-δ-valerolactone-β-acetic acid (I) stand with 5 ml. SOCl$_2$ 4 hrs. gave the corresponding acyl chloride, b$_1$ 187-8°, in 47% yield. This (3.7 g.) in C$_6$H$_6$ added to 3.4 g. homoveratrylamine and 1.7 g. pyridine in C$_6$H$_6$ and stirred 1 hr., then treated with H$_2$O gave 88% corresponding N-homoveratrylacetamide, C$_6$H$_{19}$O$_5$N, a viscous oil. This (5 g.), 7.5 ml. POCl$_3$ and 50 ml. MePh refluxed 1 hr., decanted, the residue treated with 30 ml. dil. HCl the soln. freed of tar and treated with NaI soln., and extd. with CHCl$_3$ gave 32% ... [1,1-dihydro-?-dimethoxy-?-isoquinolyl) methyl]-δ-valerolactone-III, m. 199-201° (from EtOH), ... m. 181-2°. I in EtOH satd. with dry HBr at 0° gave after 1.5 days 72%, EtO-CCH-CH(CH$_2$CH-Br)CH$_2$CO Et, b. 140-1°, ... 74-6-2N, which, 5 g. with 12 g. homoveratrylamine in MePH and reflux 2.5 hrs. gave N-homoveratryl-δ-ethyl-α-piperidone-γ-acetate, b$_4$ 227-31°, 21.6%. Heating I (3 g.) with 8 g. homoveratrylamine 4 hrs. at 190-200° gave 68% dihomoveratrylamide of β-(α'-hydroxyethyl)propylglutaric acid. C$_{26}$H$_{36}$O$_6$N$_2$, a viscous oil. Heating HO$_2$CCH$_2$CH(CH$_2$CH$_2$CH(CH$_2$CO$_2$H with SOCl$_2$ 2 hrs. at 90° gave the acyl chloride, 77.5%, b. 141-3°, which added in C$_6$H$_6$ to homoveratrylamine with cooling gave 83% dihomoveratrylamide of β-(α'-bromomethyl)propylglutaric acid, a viscous oil (from EtOH-Et$_2$O). The products are intermediates for synthesis of emetine.

G. M. Kosolapoff

YEVSTIGNEYEVA, R.P.; BRAYER, Yu.; PREOBRAZHENSKIY, N.A.

Synthesis of emetamine alkaloid. Dokl. AN SSSR 117 no.2:227-229
N '57.   (MIRA 11:3)

1. Predstavleno akademikom I.N. Nazarovym.
                              (Ipecacuanha)

5(3)   SOV/153-58-5-7/28
AUTHORS: Yevstigneyeva, R. P., Malina, Yu. F., Preobrazhenskiy, N. A.

TITLE: Synthesis of Cis and Trans Homocincho Loipone (Sintez tsis- i
             trans-gomotsinkholoyponov)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya
             tekhnologiya, 1958, Nr 5, pp 46-51 (USSR)

ABSTRACT: The authors extended the earlier (Refs 1-4, 6, 7) devised
             synthesis scheme to the compounds of indole structure, as far
             as alkaloids of this group are of theoretical and practical
             interest as well (Ref 5). Homocincho loipone and homo mero-
             chinene are of importance for the synthesis of the alkaloids
             of the indole group according to the scheme mentioned. The
             synthesis of homocincho loipone described in the present paper
             was carried out on the basis of the diethyl ester of the
             $\beta-(\alpha'-cyan)$-propyl glutaric acid. This ester is the most im-
             portant semiproduct in the synthesis of the alkaloid emetin
             (Refs 6, 7). By hydrogenating the said ester 4-carbethoxy
             methyl-5-ethyl-piperidone-2 (by-product in the emetin production)
             is obtained in 2 isomeric forms: 1) Crystalline (II-a), and
Card 1/4   2) Oily (II-b). The synthesis with these two substances was

Synthesis of Cis and Trans Homocincho Loipone

carried out separately. The reduction of the said piperidone
with lithium aluminum hydride leads to 3-ethyl-4-(β-oxy ethyl)-
piperidines (III-a and b). The crystalline piperidone un-
soluble in ether was reduced in dioxane, the oily one in ether.
By the action of thionyl chloride upon the hydrochlorides of
the said piperidines hydrochlorides of the 3-ethyl-4-(β-ethyl
chloride)-piperidines are formed. Without isolation these are
transformed into N-acetyl-3-ethyl-4-(β-ethyl chloride)-
piperidines (IV-a and b). When treating the latter with potas-
sium cyanide N-acetyl-3-ethyl-4-(β-ethyl cyanide)-piperidines
(V-a and b) are formed. The saponification of these piperidines
finally yields 3-ethyl-4-(β-carboxyl-ethyl)-piperidines, i. e.
homocincho loipones (VI-a and b). Chlorine aurates of homocincho
loipone were synthesized: a) from the crystalline form of
4-carbethoxy-methyl-5-ethyl-piperidone-2 (II-a) with a
melting point of 174.4-175°; b) from the oily form (II-b) with
a melting point of 194.5-195°. The structure of the synthesized
substances was checked by comparison of the intermediate
products (III-a and b) with 3-ethyl-4-(β-oxy ethyl)-piperidine
(III-v), which had been synthesized by way of the merochinene
stage from natural quinine. As is known, the piperidine products

Card 2/ 4

Synthesis of Cis and Trans Homocincho Loipone

of the cinchona bark-alkaloids maintain their cis configuration.
Table (p 48) gives the characteristics of the compounds
synthesized. Infrared spectra (Fig p 48, taken by Yu. N.
Shenker) proved the identity of the synthesized substances
mentioned (III-a, b and v) with those from natural quinine.
Based on these spectra as well as on the melting points the
authors arrived at the conclusion that the homocincho loipone
synthesized from the semi-product corresponds to a cis-con-
figuration, whereas that from the oily type corresponds to a
trans-configuration.
There are 1 figure, 1 table, and 7 Soviet references.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni
M. V. Lomonosova, Kafedra tekhnologii lekarstvennykh i
dushistykh veshchestv (Moscow Institute for Fine Chemical
Technology imeni M. V. Lomonosov, Chair of the Technology of
Medicinal Substances and Aromatics)

Card 3/4

79-28-5-11/69

AUTHORS: Yevstigneyeva, R. P., Kashnikova, N. M., Baynova, M. S.,
              Preobrazhenskiy, N. A.

TITLE: Investigations in the Series of Isoquinoline Compounds
              (Issledovaniya v ryadu izokhinolinovykh soyedineniy)
              XII. Synthesis of 4',5'-Dimethoxy-5,6-Dimethyl-7-(1"-Methyl-
              -6",7"-Dimethoxy 1",2",3",4" tetrahydroisoquinolyl)-
              -3,4,5,6,7,8-Hexahydro-Benz-(1',2'; 1,2)-Quinolisine (XII.
              Sintez 4',5'-dimetoksi-5,6-dimetil-7-(1"-metil-6",7"-dimetoksi-
              -1",2",3",4"-tetragidroizokhinolil)-3,4,5,6,7,8-geksagidro-
              -benz-(1',2';1,2)khinolizina)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 5,
              pp. 1184 - 1189 (USSR)

ABSTRACT: One of the most interesting properties of the alkaloid emetine
              (formula I of scheme 1) is its capability to convert into
              the red-colored compound, the so-called rubremetine (Reference
              1-3) on the action of light oxidizing agents. Its structure
              has hitherto not been determined although some proposals in
Card 1/3   this respect were uttered (Reference 4-8). The most probable

Investigations in the Series of Isoquinoline Compounds. XII.

formulae of those suggested for rubremetine demand the formation of a ring system with the hydrocarbon atom C_8 taking part in it. The formation of such a system would be very difficult in the presence of the substituent of the above-mentioned carbon atom, as has to be assumed. In order to carry out a more detailed investigation of the influence of the ring substituent on the formation of rubremetine the authors carried out the synthesis of two analogs of emetine which have two alkyl substituents in two free positions at the carbon atoms C_5 and C_8, namely: of 4',5'-dimethoxy-5,6--dimethyl-7-(1"-methyl-6",7"-dimethoxy-1",2",3",4"-tetra-hydroisoquinolyl)-3,4,5,6,7,8-hexahydro-benz-(1'2' : 1,2)--quinolisine (IV) and of 2) 8-methyl-emetine (V) (see scheme 2). The synthesis of the former is the subject of this report. The compound (IV) is also of interest because it corresponds to one of the assumed structures. As a basis for the synthesis the scheme 3 elaborated for emetine (Reference 9) was used. Thus the synthesis of the 4,5'-dimethoxy-5,6-dimethyl-7-

Card 2/3

79-28-5-11/69

Investigations in the Series of Isoquinoline Compounds. XII.

-(1"-methyl-6",7"-dimethoxy-1",2",3",4"-tetrahydroisoquinolyl)-
-3,4,5,6,7,8-hexahydro-benz(1',2' : 1,2)- quinolisine ana-
logous to emetine was realized. The authors obtained a rubro-
-compound in the oxidation with bromine of the product analo-
gous to emetine and thus proved that the substituent at the
carbon atom C_5 does not impede the formation of a rubremitine
analog. There are 1 figure and 9 references, 1 of which is
Soviet.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii (Moscow
Institute for Fine Chemical Technology)

SUBMITTED: April 18, 1957

Card 3/3

79-28-5-12/69

AUTHORS: Yevstigneyeva, R.P., Lavrova, L.V., Zarankina, Ts. D.,
               Preobrazhenskiy, N. A.

TITLE: Investigations in the Series of Isoquinoline Compounds
               (Issledovaniya v ryadu izokhinolinovykh soyedineniy)
               XIII. Synthesis of 8-Methylemetine (XIII. Sintez 8-metilemetina)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol, 28, Nr 5, pp, 1190-1196,
               (USSR)

ABSTRACT: The synthesis of 8-methylemetine was carried out in order
               to explain the influence of the alkyl substituent at the carbon
               atom C_8 in the molecule of emetine on the formation of the
               rubro compound. For the synthesis of 8-methylemetine that
               scheme elaborated for the production of emetine served as
               scheme (ref. 1). (see reaction process in the mentioned
               scheme)! The final product, the desired   8-methylemetine
               (XIII) separates in the end in form of a light-yellow oil.
               By treating the ether solution of 8-methylemetine with an ether
Card 1/3   saturated with hydrogen chloride a chlorine hydrate is obtained

79-28-5-12/69

Investigations in the Series of Isoguinoline Compounds. XIII. Synthesis of 8-Methylemetine

in form of a colorless amorphous powder. A crystalline chlorine hydrate could not be obtained as it is extremely soluble in alcohol. In the case of the oxidation of the basic 8-methylemetine (XIII) with bromine and iodine no rubro-compounds could be synthetized. The oxidation with bromine yielded a slightly yellowish, and that with iodine a yellow amorphous product. The ultraviolet spectra (see figure) of these compounds remind intensely of the spectra of the salts of psychotrine which, as is known, represents an intermediate product in the oxidation of emetine in its conversion to rubroemitine. Thus the presence of an alkyl substituent at the carbon atom C_8 hampers the formation of a rubro compound, which proves the participation of the carbon atom C_8 in the formation process of rubremetine. There are 1 figure and 3 references, 2 of which are Soviet.

Card 2/3

79-28-5-12/69

Investigations in the Series or Isoquinoline Compounds. XIII. Synthesis of 8-methylemetine

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii
               (Moscow Institute for Fine Chemical Technology)

SUBMITTED: April 18, 1957

Card 3/3

YEVSTIGNEYEVA, R.P.

Isoquinoline compounds. Part 14: Esters of isomeric 4',5'-dimethoxy-6-ethyl-3,4,5,6,7,8-hexahydro-benz-(1,2:1',2')-quinolizil-7-acetic acids. Zhur.ob.khim. 28 no.9:2458-2463 S '58.   (MIRA 11:11)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii.
                  (Acetic acid)

YEVSTIGNEYEVA, R.P.; GLUSHKOV, R.G.; PREOBRAZHENSKIY, N.A.

Isoquinoline compounds. Part 15: Synthesis of isomeric o-methyl-
psychotrines. Zhur. ob. khim. 28 no.9:2463-2472 S '58.
(MIRA 11:11)
1. Moskovskiy institut tonkoy khimicheskoy tekhnologii.
(Alkaloids)   (Phychotrine)

AUTHORS: Ch'en Ch'ang-pai, Yevstigneyeva, R.P., Preobrazhenskiy, N.A.

SOV/79-28-11-41/55

TITLE: Synthesis of the 2-(α-Pyridyl)-3-(β-Oxyethyl)-Indole
              (Sintez 2-(α-piridil)-3-(β-oksietil)-indola)

ABSTRACT: The scope of the present paper is the synthesis of the most im-
              portant quinalcaloids of the indole group, the cinchonamines.
              First the synthesis of the 2-(α-pyridyl)-3-(β-oxy-ethyl)-indole
              (III), an analog of cinchonamine according to scheme 1 is de-
              scribed, which leads to the synthesis of cinchona. The condensation
              of the γ-butyrolactone (IV) with the ester of the picolinic acid
              (V) yields the lactone (VI), which with hydrochloric acid is trans-
              formed into the ketone (VII). Its phenyl hydrazone (VIII) is ob-
              tained in two isomeric forms differing with respect to their
              physico-chemical properties. The ultraviolet absorption spectra of
              the two isomers in ethyl alcohol are the same, but the absorption
              maxima of the α-isomer are displaced to the side of the short
              waves, as compared to those of the β-isomer (Fig 1). The β-isomer
              of the phenyl hydrazone is of higher basicity than the α-isomer
              and contrary to the latter loses easily a molecule of water on its
Card 1/3   heating in vacuum; this may be due to the fact that the hydroxyl

Synthesis of the 2-(α-Pyridyl)-3-(β-Oxyethyl)-Indole   SOV/79-28-11-41/55

group and the hydrogen in secondary nitrogen are close to each
other and can easily separate in form of water under the formation
of a six-membered cycle (XI). From this follows that the cis-compound
(IX) must be attributed to the α-isomer and the anti-configuration
(X) to the β-isomer as regards the α-pyridyl group. The α-isomer of
the phenyl hydrazone of ketone (VII) in spite of all attempts
could not be transformed into the indole derivative. On heating the
hydrochloride of the phenyl hydrazone of the α-pyridyl-ω-oxy-propyl
ketone (of the β-isomer) with concentrated hydrochloric acid the
2-(α-pyridyl)-3-(β'-oxy-ethyl)-indole (III) was separated from the
reaction mass, which was proved by its ultraviolet absorption
spectrum (Fig 2) that points to the presence of the indole nucleus.
The analogous scheme based on the condensation of the γ-butyro-
lactone with the ethyl ester of 3-vinyl quinuclaidine carboxylic
acid-6 made it possible to the authors to realize finally the
synthesis of the alkaloid cinchonamine.- There are 2 figures and
3 references.

Card 2/3

Synthesis of the 2-(α-Pyridyl)-3-(β-Oxyethyl)-Indole   SOV/79-28-11-41/55

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii
                (Moscow Institute of Fine Chemical Technology)

SUBMITTED: September 13, 1957

Card 3/3

5(3)

AUTHORS: Ch'en Ch'an-pai, Yevstigneyeva, R. P.,   SOV/20-123-4-37/53
                Preobrazhenskiy, N. A.

TITLE: Synthesis of the Alkaloid Cinchonamine (Sintez alkaloida
                tsinkhonamina)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 4,
                pp 7o7 - 7o8 (USSR)

ABSTRACT: The alkaloid of the cinchona bark is a link between the
                cinchona alkaloids of the quinoline series and those of the
                indole series (Refs 1,2). In the present paper the synthesis
                of the optically active cinchonamine is described. The authors
                used a scheme for the production of the pyridine analog of
                cinchonamine (Ref 3), which had been devised by them earlier.
                Ethyl ester of 3-vinyl-quinuclidine carboxylic acid-6 (I) is
                condensed with γ-butyro lactone (II) in dry benzene in the
                presence of sodium ethylate at 4o-85°. After an appropriate
                treatment α-(3-vinyl-quinuclidoyl-6)-γ-butyro lactone (III)
                is formed as a colorless, viscous, oily substance. It is very
                soluble in ether, alcohol, benzene, and water; its melting
Card 1/3   point is 152-153°/0.5 mm, its yield 35.7%. On heating the

Synthesis of the Alkaloid Cinchonamine   SOV/20-123-4-37/53

substance (III) with 2 n sulfuric acid at 120° the lactone
cycle is split and a decarboxylation under the formation of
ω -oxy-propyl-α-(3-vinyl-quinuclidyl-6)-ketone (IV) takes
place; yield 70.3%. The obtained light yellow liquid is
heated with 10% phenyl hydrazine solution in alcohol for 8
hours. The formed phenyl hydrazine (V) of the substance (IV)
is a viscous, yellow oil; its yield is 76.5%. After further
appropriate treatment the cinchonamine is formed as colorless
crystals which are very soluble in alcohol, ether, chloroform
and benzene, less soluble in cold alcohol and petroleum ether,
and difficult to dissolve in water. The mentioned constants of the
synthesized optically   active cinchonamine fully agree with those
of the natural substance mentioned in publications (Ref 5). The
reaction devised by the authors opens the way for the production
of other alkaloids of this series. There are 5 references, 2
of which are Soviet.

Card 2/3

Synthesis of the Alkaloid Cinchonamine   SOV/20-123-4-37/53

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im.
                M. V. Lomonosova (Moscow Institute of Fine Chemical Technology
                imeni M. V. Lomonosov)

PRESENTED: July 31, 1958, by A. I. Oparin, Academician
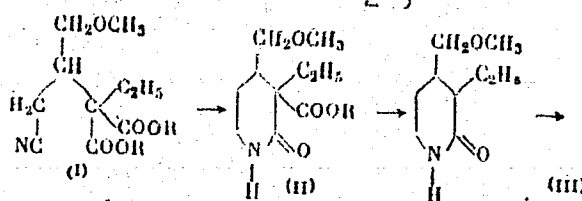
SUBMITTED: July 30, 1958

Card 3/3

5.3610

AUTHORS:

Malina, Yu. F., Yevstigneyeva, R. P., Preobrazhenskiy, N. A.

TITLE: Synthesis of cis-Homocincholoipon

PERIODICAL:

ABSTRACT:

The synthesis of cis- and trans-homocincholoipons based on diethyl ester of β-(α -cyanopropyl)glutaric acid was reported previously (Izv. vyssh. uchebn. zaved., MVO SSSR, Khimiya i khim. tekhnolog., 1958, Nr 5, p 46). The present study deals with the synthesis of cis-homocincholoipon (VI; R'=H) based on ethyl ester of the mononitrile of α-ethyl- α -carboethoxy- β -methoxy-methylglutaric acid (I; $R=C_2H_5$):
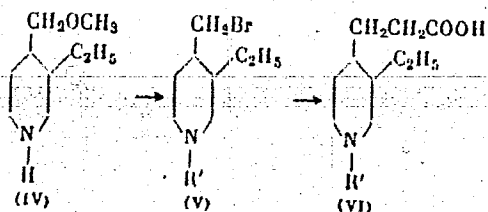
Card 1/4

Synthesis of cis-Homocincholoipon

77385
SOV/79-30-1-46/78

The reduction of ester (I) in ethanol in the presence of Raney nickel gave 3-ethyl-3-carboethoxy-4-methoxy-methylpiperidone-2 (II; $R=C_2H_5$) in two isomeric forms: (1) bp 175-177° C at 1 mm; and (2) bp 210-215° C (1 mm). Fraction 175-177° C was used in the subsequent reactions. Saponification of piperidone (II) ($R = C_2H_5$) with KOH in water-alcohol solution gave the acid (II; $R = H$) which on decarboxylation gave 3-ethyl-4-methoxy-methylpiperidone-2 (III). Reduction of (III) with lithium aluminum hydride in dioxane gave 3-ethyl-4-

Card 2/4

Synthesis of cis-Homocincholoipon

77385
SOV/79-30-1-46/78

methoxymethylpiperidine (IV). The latter, on treatment with 47% hydrobromic acid, gave 1-nitroso-3-ethyl-4-bromomethylpiperidine (V; R'=NO), which on condensation with sodium malonate, saponification, and decarboxylation gave 1-nitroso-3-ethyl-piperidyl-4-propionic acid (VI; R'=NO). Finally, the elimination of the nitroso-group by heating the latter acid with cuprous chloride gave cis-homocincholoipon (VI; R' = H; mp 172-172.5° C). The same starting materials and same type of reactions can be applied also for the synthesis of pilocarpine alkaloids. Ester I (R=C_2H_5) on treatment with methanol saturated with HCl gave methyl ester of γ, γ - dicarboethoxy- β -methoxymethylcaproic acid (VII). The latter was hydrolyzed with HCl or 40% hydrobromic acid, and yielded a mixture of diastereomeric α-ethylhomo-paraconic acids (VIII; mp 48-60° C), one of which was identified as racemic homopilopic acid (mp 102-103° C), the other as racemic homoisopilopic acid (mp 73-74° C).

Card 3/4

Synthesis of cis-Homocincholoipon

77385
SOV/79-30-1-46/78
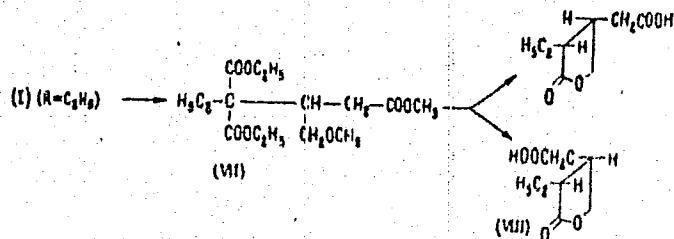
There are 2 references, 1 U.S., 1 Soviet. The U.S. reference is: C. F. Koelsch, J. Am. Chem. Soc., 68, 146 (1946).

ASSOCIATION: Moscow Institute of Fine Chemical Technology (Moskovskiy institut tonkoy khimicheskoy tekhnologii)

SUBMITTED: December 26, 1958

Card 4/4

5.3600

77872
SOV/79-30-2-23/78

AUTHORS: Xevstigneyeva, R. P., Ch'en Chang-pai, Preobrazhenskiy,
               N. A.

TITLE: Synthesis of (+)-3-Vinyl-8-quinuclidinecarboxylic Acid

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 2, pp 473-
               476 (USSR)

ABSTRACT: The authors developed a new method for the synthesis
               of (+)-3-vinyl-8-quinuclidinecarboxylic acid from
               quinine through quininone and one of its oximes (IIIb)
               as intermediates of the ester of the quininic acid
               (V, R = C_2H_5). Rearrangement of the oxime (IIIa) leads
               to the ester of quininic acid (IV, R = C_2H_5) (see scheme
               below for the reaction path).

Card 1/5

Synthesis of (+)-3-Vinyl-8-quinuclidinecar-
boxylic Acid

77872
SOV/79-30-2-23/78
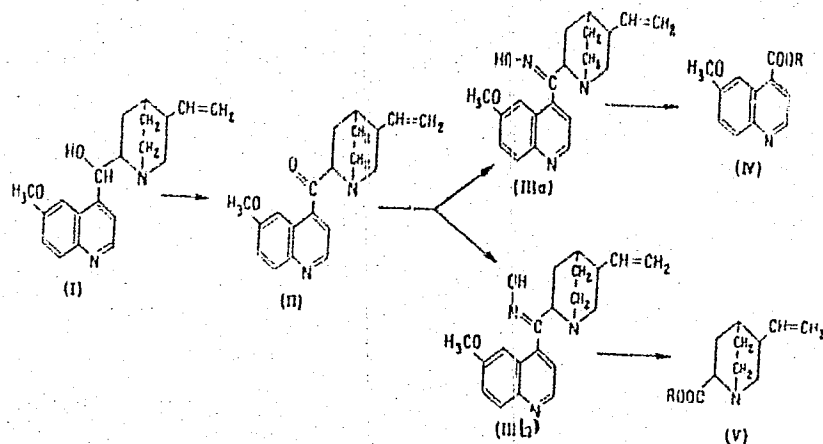
Card 2/5

Synthesis of (+)-3-Vinyl-8-quinuclidinecar-   77872
boxylic Acid   SOV/79-30-2-23/78

A mixture of oximes IIIa and IIIb is obtained by heat-
ing quininone and hydroxylamine hydrochloride in
alcoholic solution of alkali, and is purified by
dissolving the mixture in 5% KOH with subsequent libera-
tion with carbon dioxide (mp 110-113°, $[\alpha]_D^{20}$ + 60°).

The esters were obtained from the mixture in the follow-
ing way: To the mixture of oximes (71.4 g) dissolved
in (560 ml) 5% KOH powdered benzenesulfonylchloride
(49.9 g) is added slowly (within 1-1.5 hr), with
constant stirring. The reddish-yellow oily precipi-
tate is extracted with chloroform (400 ml), washed with
NaOH and water, and dried with $NaHSO_4$. After vacuum

distillation of chloroform, the precipitate is dis-
solved in alcoholic solution of KOH (117 g KOH in 250
ml CH_3OH and 88 ml H_2O) and heated at 100-105° for 44

hr. The residue is dissolved in water (400 ml) and
extracted with benzene. The aqueous portion is neutra-
lized with HCl to pH 7, filtered, concentrated by
evaporation, and extracted with hot absolute alcohol.

Card 3/5

Synthesis of (+)-3-Vinyl-8-quinuclidinecar-   77872
boxylic Acid   SOV/79-30-2-23/78

After repeated addition of acidified alcohol and
vacuum distillation (after prolonged standing of the
alcohol solution) of the solvent, the residue is
dissolved in water, neutralized with K_2CO_3, and ex-
tracted with ether. Distillation of the residue left
after removal of ether results in two fractions--ethyl
ester of 3-vinyl-8-quinuclidinecarboxylic acid (yield
14.8% (6.52 g), bp 80-82° (0.5 mm), d_4^{20} 1.0280) and

ethyl ester of quininic acid (yield 5.1% (2.5 g), bp
138-142° (0.5 mm)). The 3-vinyl-8-quinuclidinecar-
boxylic acid is obtained from its ester (V) by letting
the latter (0.31 g) stand with 10 ml of water for 10
days, with subsequent vacuum distillation of water
(mp 204-206°). There are 3 figures; and 4 references,
1 Soviet, 1 Swiss, 1 U.K., 1 U.S. The U.K. and U.S.
references are: T. A. Henry, K. S. Kirby, G. E. Shaw,
J. Chem. Soc., 524, (1945); R. B. Woodward, N. L. Wendler,
Card 4/5   F. J. Brutschy, J. Am. Chem. Soc., 67, 1425 (1945).

Synthesis of (+)-3-Vinyl-8-quinuclidinecar-   77872
boxylic Acid   SOV/79-30-2-23/78

ASSOCIATION: Moscow Institute of Fine Chemical Technology (Moscov-
                skiy institut tonkoy khimicheskoy tekhnologii)

SUBMITTED: February 4, 1959

Card 5/5

5.3600

77873
SOV/79-30-2-24/78

AUTHORS: Hong-Tiung, Yevstigneyeva, R. P., Preobrazhenskiy, N. A.

TITLE: Studies in the Series of Isoquinoline Compounds. XVI. Synthesis of 4',5'-Dimethoxy-6-methyl-7-(1"-methyl-6", 7"-dimethoxy-1",2",3",4"-tetrahydroisoquinolyl)-3,4,5, 6,7,8-hexahydrobenzo-(1,2:1'2')-quinolizine

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 2, pp 476-479 (USSR)

ABSTRACT: This is a continuation of the series of papers on emetine and its derivatives (Yevstigneyeva, R. P., et al., Zhur. obshchey khim., 28, 1184, 1190 (1958)). The path for the synthesis of 4'5'-dimethoxy-6-methyl-7-(1"-methyl-6",7"-dimethody-1",2",3",4"-tetrahydroiso-quinolyl)-3,4,5,6,7,8-hexahydrobenzo-(1,2"1',2')-quino-lizine (VII) (this compound differs from emetine only by the presence of methyl instead of ethyl group at C_6) is shown in the scheme below.

Card 1/5

Studies in the Series of Isoquinoline Compounds. 77873
XVI. Synthesis of 4', 5'-Dimethoxy-6-methyl-   SOV/79-30-2-24/78
7-(1"-methyl-6",7"-dimethoxy-1",2",3",4"-
tetrahydroisoquinolyl)-3,4,5,6,7,8-hexahydro-
benzo-(1,2:1'2')-quinolizine

Card 2/5

Studies in the Series of Isoquinoline Compounds. 77873
XVI. Synthesis of 4',5'-Dimethoxy-6-methyl-   SOV/79-30-2-24/78
7-(1"-methyl-6",7"-dimethoxy-1",2",3",4"-
tetrahydroisoquinolyl)-3,4,5,6,7,8-hexahydro-
benzo-(1,2:1'2')-quinolizine
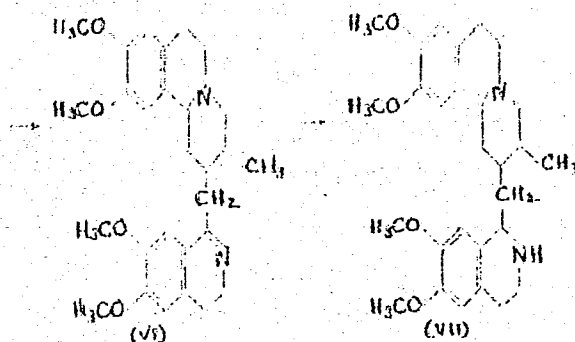
The methyl ester of β -(α'-cyano- α'-carbethoxy)-
ethylglutaric acid (I) (bp 162-163° (2 mm), d_4^{20} 1.1844,
n_D^{20} 1.4620) was synthesized by reacting methyl ester

Card 3/5

Studies in the Series of Isoquinoline Compounds. 77873
XVI. Synthesis of 4',5'-Dimethoxy-6-methyl-   SOV/79-30-2-24/78
7-(1"-methyl-6",7"-dimethoxy-1",2",3",4"-
tetrahydroisoquinolyl)-3,4,5,6,7,8-hexahydro-
benzo-(1,3:1'2')-quinolizine

of β-(cyanocarbethoxy)-methylglutaric acid with
methyl iodide in presence of sodium methoxide. Saponi-
fication and decarboxylation of I gives II (bp 126-
127° (2 mm), d_4^{20} 1.1360, n_D^{20} 1.4489). Piperidone
(III) (bp 198-204° (0.1 mm)) was obtained by catalytic
hydrogenation of (II) in presence of homoveratryl-
amine. Cyclization of (III) by reacting it with
phosphoryl chloride and subsequent reduction of the
resulting chloride of tertiary amine results in methyl
ester of 4',5'-dimethoxy-6-methyl-3,4,5,6,7,8-hexa-
hydrobenzo-(1,2:1',2')-quinolizyl-7-acetic acid (IV)
(mp 192-194°, λ_{max} 230 (log $\mathcal{E}$ 4.19), 285 (log $\mathcal{E}$
3.77), λ_{min} 260 (log $\mathcal{E}$ 3.28)). Heating of the
latter with homoveratrylamine leads to the amide (V)
(mp 89-91°, λ_{max} 225 (log $\mathcal{E}$ 4.20), 280 (log $\mathcal{E}$ 4.00)

Card 4/5

Studies in the Series of Isoquinoline Compounds. 77873
XVI. Synthesis of 4',5'-Dimethoxy-6-methyl-   SOV/79-30-2-24/78
7-(1"-methyl-6",7"-dimethoxy-1",2",3",4"-
tetrahydroisoquinolyl)-3,4,5,6,7,8-hexahydro-
benzo-(1,3:1'2')-quinolizine

λ_{min} 255 (log $\mathcal{E}$ 3.60), 345 (log $\mathcal{E}$ 3.05)), which, upon cyclization effected by phosphoryl chloride, gives dihydroisoquinoline derivative (VI) (mp 59-60°, λ_{max} 225 (log $\mathcal{E}$ 4.20), 280 (log $\mathcal{E}$ 3.95), 305 (log $\mathcal{E}$ 3.79), λ_{min} 250 (log $\mathcal{E}$ 3.58), 300 (log $\mathcal{E}$ 3.76)). The hydrochloride of the final compound (VII) (229-230°, λ_{max} 230 (log $\mathcal{E}$ 4.09), 285 (log $\mathcal{E}$ 3.77), λ_{min} 255 (log $\mathcal{E}$ 2.92)) is obtained by reduction of (VI). There are 4 Soviet references.

ASSOCIATION: Moscow Institute of Fine Chemical Technology (Moskov-
skiy institut tonkoy khimicheskoy tekhnologii)

SUBMITTED: February 23, 1959
Card 5/5

S/079/60/030/05/12/074
B005/B002

AUTHORS: Yevstigneyeva, R. P., Gavrina, N. K., Preobrazhenskiy, N. A.

TITLE: Investigations in the Series of Isoquinoline Compounds.
             XVII. Synthesis of 4',5'-Dimethoxy-7-(1"-methyl-6",7"-di-
             methoxytetrahydroisoquinolyl)-3,4,5,6,7,8-hexahydro-
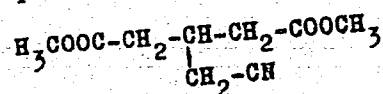   benz-(1,2:1',2')-quinolizine, or C-Noremetine

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 5, pp. 1454-1458

TEXT: C-Noremetine differs from the alkaloid emetine by the absence of
the ethyl group on C_6. The authors made use of the scheme of emetine
synthesis to work out a procedure for the synthesis of C-noremetine
(formula VI), in order to be able to draw comparisons between end pro-
ducts and intermediate products obtained in different ways. These
comparisons are important for the clarification of certain problems of
stereoisomerism of the natural alkaloid emetine. The synthesis worked
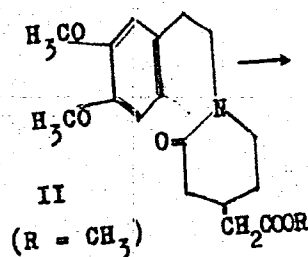out runs along the following scheme:

Card 1/5

Investigations in the Series of Isoquinoline   S/079/60/030/05/12/074
Compounds. XVII. Synthesis of 4',5'-Dimethoxy-   B005/B002
7-(1"-methyl-6",7"-dimethoxytetrahydroiso-
quinolyl)-3,4,5,6,7,8-hexahydrobenz-(1,2:1',2')-
quinolizine, or C-Noremetine

$$H_3COOC-CH_2-\underset{\overset{|}{CH_2-CH}}{CH}-CH_2-COOCH_3 \quad \underrightarrow{\begin{array}{c}\text{reductive condensation}\\\text{with homoveratryl amine}\end{array}}$$

I

II

(R = CH$_3$)

$$\underrightarrow{\begin{array}{c}\text{ring closure}\\\text{POCl}_3\end{array}}$$

$$\left[\right] Cl^-$$

$$\underrightarrow{\begin{array}{c}\text{cat. hydrogenation}\\ \text{[H]/Ni}\end{array}}$$

III

CH$_2$COOCH$_3$

Card 2/5

Investigations in the Series of Isoquinoline
Compounds. XVII. Synthesis of 4',5'-Dimethoxy-
7-(1"-methyl-6",7"-dimethoxytetrahydroiso-
quinolyl)-3,4,5,6,7,8-hexahydrobenz-(1,2:1',2')-
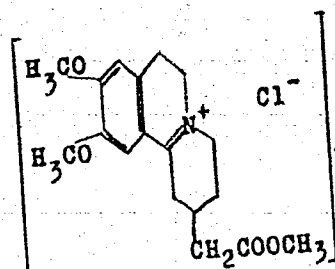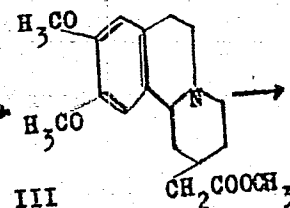quinolizine, or C-Noremetine

S/079/60/030/05/12/074
B005/B002

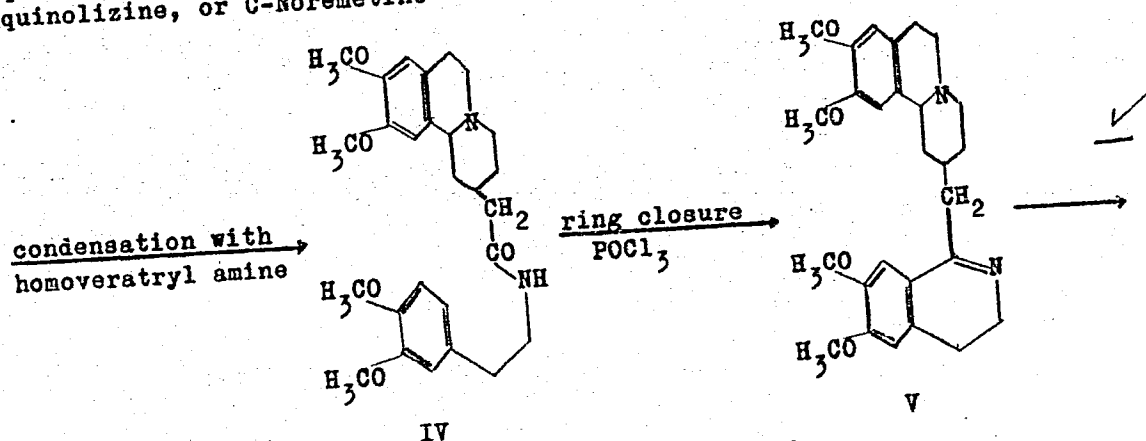condensation with
homoveratryl amine

IV

ring closure
POCl$_3$

V

Card 3/5

Investigations in the Series of Isoquinoline
Compounds. XVII. Synthesis of 4',5'-Dimethoxy-
7-(1"-methyl-6",7"-dimethoxytetrahydroiso-
quinolyl)-3,4,5,6,7,8-hexahydrobenz-(1,2:1',2')-
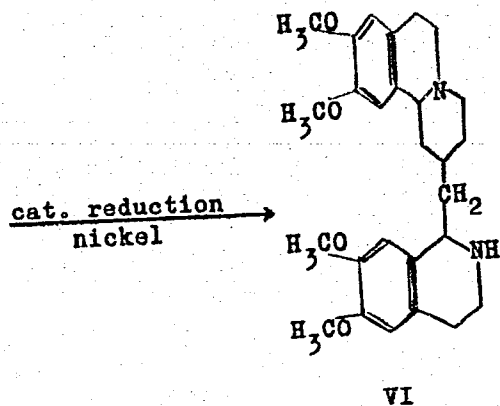quinolizine, or C-Noremetine

S/079/60/030/05/12/074
B005/B002

VI

Card 4/5

Investigations in the Series of Isoquinoline   S/079/60/030/05/12/074
Compounds. XVII. Synthesis of 4',5'-Dimethoxy-   B005/B002
7-(1"-methyl-6",7"-dimethoxytetrahydroiso-
quinolyl)-3,4,5,6,7,8-hexahydrobenz-(1,2:1',2')-
quinolizine, or C-Noremetine

Compound I was obtained by selective saponification and decarboxylation
of the methyl ester of β-(cyano-, carbethoxy)-methyl glutaric acid, which
is an intermediate product in the synthesis of emetine (Ref. 5). An
experimental part describes in great detail the procedure followed in
the synthesis. Yields and characteristic data concerning the inter-
mediate products are given for each stage of synthesis. There are 5 refer-
ences: 2 Soviet, 1 English, and 2 German.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii (Moscow
             Institute of Fine Chemical Technology)

SUBMITTED: June 2, 1959

Card 5/5

ZOTCHIK, M.V.; YEVSTIGNEYEVA, R.P.; PREOBRAZHENSKIY, N.A.

> Synthesis of ethyl 4,6,9-triketocaprate. Zhar.ob.khim. 30
> no.6:1828-1831 Je '60.   (MIRA 13:6)
>
> 1. Moskovskiy institut tonkoy khimicheskoy tekhnologii.
>   (Capric acid)

CHEN' CHAN-BAY; YEVSTIGNEYEVA, R.P.; PREOBRAZHENSKIY, N.A.

Synthesis of the natural alkaloid (+)-cinchonamine. Zhur.ob.
khim. 30 no.6:2085-2088 Je '60.   (MIRA 13:6)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii.
                   (Cinchonamine)

ZOTCHIK, N.V.; YEVSTIGNEYEVA, R.P.; PREOBRAZHENSKIY, N.A.

Synthesis of the ethyl ester of 4,6,9,11,14-pentaketopenta-
decanoic acid and of the ethyl ester of 4,6,9,11,14,16,19-
heptaketoeicosanoic acid. Zhur.ob.khim. 30 no.7:2259-2261
Jl '60.   (MIRA 13:7)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii.
        (Pentadecanoic acid) (Eicosanoic acid)

YEVSTIGNEYEVA, R.P.; GLYBINA, V.A.; OKART, Ye.V.; PREOBRAZHENSKIY, N.A.

Claisen condensation of esters of β-methyllevulinic acid.
Zhur.ob.khim. 30 no.7:2261-2263 Jl '60. (MIRA 13:7)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii.
(Levulinic acid)

ANDREYEV, S.V.; YEVSTIGNEYEVA, R.P.; MIRZABEKOV, A.M.; SPERANSKAYA,
    N.P.; PREOBRAZHENSKIY, N.A.

    Similarity between the chemical structure and biological
    activity of ribonuclease and increpan. Zhur.ob.khim. 30
    no.7:2433 Jl '60.   (MIRA 13:7)

    1. Moskovskiy institut tonkoy khimicheskoy tekhnologii i
    institut farmakologii i khimioterapii Akademii meditsinskikh
    nauk SSSR.
                    (Ribonuclease)

MIROSHNICHENKO, L.D.; YEVSTIGNEYEVA, R.P.; PREOBRAZHENSKIY, N.A.

Infrared absorption spectra and structure of some derivatives
of β-diketones. Zhur.ob.khim. 30 no.8:2533-2536 Ag '60.
(MIRA 13:8)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii.
(Ketones--Spectra)

GLYBINA, V.A.; OKART, Ye.V.; YEVSTIGNEYEVA, R.P.; PREOBRAZHENSKIY, N.A.

Synthesis of esters of 3,8,13-trimethyl-4,6,9,11,14-pentaketo-
pentadecanoic and 2,8,13,18-tetramethyl-4,6,9,11,14,16,19-
heptaketoeicosanoic acids. Zhur.ob.khim. 30 no.8:2536-2539
Ag '60.
(MIRA 13:8)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii.
       (Pentadecanoic acid)
       (Eicosanoic acid)

MIROSHNICHENKO, L.D.; FILIPPOVICH, Ye.I.; YEVSTIGNEYEVA, R.P.; PREOBRAZHEN-
SKIY, N.A.

Prototropic rearrangement in the dipyrrylmethene series. Dokl. AN
SSSr 134 no.5:1100-1103 O '60.   (MIRA 13:10)

1. Moskovskiy institut tonkoy khimicheskiy tekhnologii im. M.V.
Lomonosova. Predstavleno akademikom A.N.Nesmeyanovym.
(Methene)

YEVSTIGNEYEVA, R. P., and ANDREYEV, S. V. (USSR)

"Hypotensive Activity of Increpane and Ribonuclease."

Report presented at the 5th International Biochemistry Congress, Moscow, 10-16 Aug 1961

YEVSTIGNEYEVA, R. P., Dr. Chem. Sci. (diss) "Synthetic Investi-

gations of Alkaloids of Ipecac." Moscow, 1961, 23 pp. (Moscow

State Univ.) 170 copies (KL Supp 12-61, 254).

BOL'SHAKOV, K.A.; YEREMIN, Yu.G.; YEVSTIGNEYEVA, R.P.

Structure of a compound of gallium chloride with methylene blue.
Izv.AN SSSR.Otd.khim.nauk no.5:745-749 My '61.   (MIRA 14:5)

1. Institut tonkoy khimicheskoy tekhnologii im. M.V.Lomonosova.
        (Gallium compounds)   (Methylene blue)

MARKARYAN, E.A.; YEVSTIGNEYEVA, R.P.; PREOBRAZHENSKIY, N.A.

      Structure of geissoschizine. Izv. AN Arm.SSR. Khim.nauki
      14 no.5:511-512 '61.   (MIRA 15:1)

      1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni
      M.V. Lomonosova.
                    (Geissoschizine)

FILIPPOVICH, Ye.I.; YEVSTIGNEYEVA, R.P.; PREOBRAZHENSKIY, N.A.

Synthetic studies in the dipyrrylmethene series. Zhur.ob.khim. 30
no.10:3253-3257 O '61.   (MIRA 14:4)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii.
(Dipyrrlmethene)

YEVSTIGNEYEVA, R.P.;   TODOROVA, Ya.N.;   PREOBRAZHENSKIY, N.A.

Synthesis of the ethyl ester of α-(β'-carboxyethyl)-β-methyllevulinic acid. Zhur. ob. khim. 31 no. 2:441-443 F '61.   (MIRA 14:2)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii.
                (Levulinic acid)

YEVSTIGNEYEVA, R.P.; TODOROVA, Ya.K.; PREOBRAZHENSKIY, N.A.

Synthesis of the ethyl ester of α-methyl-β- (β'-carboxyethyl)
-levulinic acid. Zhur. ob. khim. 31 no. 2:443-445 F '61.

(MIRA 14:2)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii.
(Levulinic acid)

YEVSTIGNEYEVA, R.P.; RZHENZNIKOV, V.M.; PREOBRAZHENSKIY, N.A.

Fries rearrangement in the 2, 6-dinitrohydroquinone series. Zhur.ob.
khim. 31 no.5:1534-1537 My '61.   (MIRA 14:5)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni M.V.
Lomonosova.
                              (Hydroquinone)

YEVSTIGNEYEVA, R.P.; MARKARYAN, E.A.; PREOBRAZHENSKIY, N.A.

Synthesis of methyl ester of indolo (1,2:2',3')3,4,5,6,7,8,-
hexahydro-7-quinolizylacetic acid. Zhur.ob.khim. 31 no.7:
2187-2190 Jl '61.
(MIRA 14:7)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni
M.V. Lomonosova.
(Acetic acid)

FILIPPOVICH, Ye.I.; YEVSTIGNEYEVA, R.P.; PREOBRAZHENSKIY, N.A.

Dipyrrolylmethene series. Part 3: Synthesis of meso-substituted dipyrrolylmethenes. Zhur.ob.khim. 31 no.9:2968-2972 S '61.
(MIRA 14:9)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni M.V. Lomonosova.
(Methene)

YEVSTIGNEYEVA, R.P.; ARKHIPOVA, L.I.; PREOBRAZHENSKIY, N.A.

Dipyrrolylmethene series. Part 4: Synthesis of asymmetric dipyrrolylmethenes. Zhur.ob.khim. 31 no.9:2972-2975 S '61.
(MIRA 14:9)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni M.V. Lomonosova.

(Methene)