MERTSALOV, A.N.

Temperature contrast and Laplacian variations in different parts of baric formations. Trudy TSIP no.83:7-12 '59.
(MIRA 12:5)

(Cyclones)

83403

S/050/60/000/009/006/008
B012/B063

3,5000

AUTHOR: Mertsalov, A. N.

TITLE: The Number of Pilot-balloon Data Necessary for Calculating the Divergence of Wind Velocity

PERIODICAL: Meteorologiya i gidrologiya, 1960, No. 9, pp. 49 - 51

TEXT: The present article deals with the errors arising in the calculation of the divergence of wind velocity. These errors are due to the fact that the data on wind velocity and direction entered in weather charts are expressed in round numbers. In the present article, the author determines the number of data necessary for avoiding these errors. It is noted that for practical purposes the components of wind velocity should be determined with an accuracy of ± 1 km/hour. In this case, the divergence is accurate to within ± 4 km/hour over a distance of 1000 km. This value is acceptable. This degree of accuracy can be attained by increasing the number of pilot-balloon data entered in the chart. It is not possible to eliminate relatively great errors (up to ± 20 km/hour) in determining the divergence, but the probability of these errors is

The Number of Pilot-balloon Data Necessary for Calculating the Divergence of Wind Velocity

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considerably reduced. This is explained in greater detail. Next, the author studies two characteristic cases of wind distribution. First, he examines the general case of quasi-parallel flow. The second line of Table 1 gives the number of pilot-balloon data necessary for calculating divergencies (with an accuracy of 4 km/hour over a distance of 1000 km) at relatively low wind velocities (30-40 km/hour). The second case described here is a quasi-circular flow in which the wind direction almost coincides with the direction of the tangent applied to the contour (with a radius of 500 km round the point for which the divergence is determined). This is frequently the case with calculations of the divergence for the eye of a cyclone or an anti-cyclone. The number of pilot-balloon data necessary for calculating the divergence with an accuracy of $\pm$ 4 km/hour over 1000 km at low wind velocities (20-25 km/hour) for a distance of 500 km from the center are given in the third line of Table 1. This table shows that only 3-5 data are necessary to eliminate the influence of the inaccuracy of the characteristic values of the wind direction on the calculation of the divergence. The results obtained in this case are accurate up to 90% and even more. However, if the wind

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velocity at a distance of 500 km from the center of the cyclone or anti-cyclone amounts to 50-60 km/hour, the necessary number of pilot-balloon data may be found in the second line of Table 1. Finally, it is noted that the necessary number of pilot-balloon data must be a little higher than those given in Table 1 since the calculation of divergencies can also be complicated by the fact that the pilot-balloon data obtained from one of the regions of the investigated contour are frequently not sufficiently comparable with the spatial variability of the wind. There are 1 table and 3 Soviet references.

Card 3/3

MERTSALOV, A.N.

Wind velocity divergence, vorticity, and the H Laplacian at high levels in quasi vertical cyclones and anticyclones. Trudy TSIP no.112:18-31 '61. (MIRA 14:5)

(Meteorology)

MERTSALOV, A.N.

Preliminary results of testing some forecasting methods of the evolution and transference of surface cyclones and anticyclones suggested by the U.S.A. Trudy TSIP no.125:19-35 '63. (MIRA 16:12)

USPENSKIY, B.D., doktor fiz.-mat. nauk, prof.; BELOUSOV, S.L., kand. fiz.-mat. nauk; PYATYGINA, K.V.; YUDIN, M.I.; MERTSALOV, A.N., kand. fiz.-mat. nauk; DAVYDOVA, O.A.; KUPRIANSKAYA, A.P.; PETRICHENKO, I.A.; MORSKOY, G.I.; TOMASHEVICH, L.V.; SAMOYLOV, A.I.; ORLOVA, Ye.I.; DZHORDZHIO, V.A.; PETRENKO, N.V.; DUBOVYY, A.S.; ROMOV, A.I.; PETROSYANTS, M.A.; GLAZOVAYA, G.P.; BATYAYEVA, T.F.; BEL'SKAYA, N.N.; CHISTYAKOV, A.D.; GANDIN, L.S.; BURTSEV, A.I.; MERTSALOV, A.I.; SAGROVYY, M.A.; BELOV, P.N.; ZVEREV, A.S., retsenzent; SIDENKO, G.V., red.; red.; DUBENTSOV, V.R., kand. fiz.-mat. nauk, nauchn. red.; SAGATOVSKIY, N.V., red.; BUGAYEV, V.A., doktor geogr. nauk, prof., red.; ROGOVSKAYA, Ye.G., red.

[Manual on short-range weather forecasts] Rukovodstvo po kratkosrochnym prognozam pogody. Leningrad, Gidrometeoizdat. Pt.1. Izd.2., perer. i dop. 1964. 519 p. (MIRA 18:1)

1. Moscow. TSentral'nyy institut prognozov.

OVSYANNIKOV, V.V., MERTSALOV, A.N., starshiy nauchnyy sotrudnik, nauchnyy red. raboty

Analysis of frontogenesis, cyclogenesis, and anticyclogenesis in the atmosphere. Trudy TSIP no.137:123-150 '64.

(MIRA 17:9

MERTSALOV, A.N.

Vorticity equation for the surface layer. Trudy TSIP no.144: 110-111 '65. (MIRA 18:11)

L 33740-66 EWT(1)/FCC GW

ACC NR: AP6025876 SOURCE CODE: UR/0050/66/000/004/0012/0018

20
3

AUTHOR: Mertsalov, A. N. (Candidate of physicomathematical sciences)

ORG: Hydrometeorological Scientific Research Center (Gidrometeorologicheskiy nauchno-issledovatel'skiy tsentr)

TITLE: Influence of the Scandinavian mountains on the formation and movement of cyclones at the earth's surface

12

SOURCE: Meteorologiya i gidrologiya, no. 4, 1966, 12-18

TOPIC TAGS: cyclone, meteorologic observation, weather forecasting, atmospheric pressure

ABSTRACT: This is an extension of an earlier study by the same author (Sbornik rabot po regional'noy sinoptike, no. 9, 1964), giving the empirical relationships between the initial development of cyclones at the earth's surface and their subsequent development in the following 12-18 hours. This paper gives the results for cyclones whose centers at the initial time of meteorological observations were situated in one of 13 regions delimited on the accompanying map, that is, in the territory of the Scandanavian mountains or their immediate neighborhood. Study of the influence of these mountains is of obvious importance for the western parts of European USSR. The study was confined to cyclones moving to the east or southeast at the initial time (deviating not more than ±22° from this

UDC: 551.515.1

0916 1010

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L 33740-66

ACC NR: AP6025876

direction, provided the cyclone center at this time was situated in regions I-VIII, or moving east or northeast is the center was situated in regions IX-XIII). Only cyclones for the autumn and winter months were considered. Only those cyclones for the years 1951-1963 were used, except for those which caused an exceptional rise of water at the mouth of the Neva River at Leningrad. The analyzed data are summarized in tables and reveal that the relationships are similar to those obtained earlier for lowland regions. These relationships are useful in short-range forecasting of weather, particularly the pressure field, in the western and northwestern USSR. Orig. art. has: 1 figure, 1 formula and 1 table. [JPRS: 36,553]

SUB CODE: 04 / SUBM DATE: 14Dec65 / ORIG REF: 001

LS

Card 2/2

MERTSALOV, I.M.

Theory of hydrothermal ore formation. Izv. AN SSSR. Ser. geol. 29 no.8:16-23 Ag '64. (MIRA 17:11)

1. Vsesoyuznyy aerogeologicheskiy trest i Gosudarstvennyy geologicheskiy komitet SSSR, Moskva.

MERTSALOV, I.V., prepodavatel'

Machine for testing weight indicators. Neftianik 6 no.7:19 Jl '61.
(MIRA 14:7)

1. Oktyabr'skiy neftyanoy tekhnikum.
(Weighing machines—Testing)

MERTSALOV, I.M.

Role of the pressure of or-mineral vapors in some species of their tranformations and the hydrothermal process. Biul. MOIP. Otd. geol. 40 no. 6:142 N-D '65. (MIRA 19:1)

1. Submitted May 6, 1965.

MERTSALOV, N.

Forge of builders. Sel'. stroi. 13 no.10:22 O '58. (MIRA 11:10)

1. Direktor Tul'skoy odnogodichnoy shkoly stroitel'nykh masterov (desyatnikov).
(Tula--Building trades--Study and teaching)

VERESHCHAGINA, N.N.; [illegible], [illegible]

New case of pyr[illegible]lytic [illegible] [illegible] pyrimidine ring. Zhur. ob.khim. [illegible] (MIRA [illegible])

1. Ural'skiy politekhn[illegible] [illegible] imeni Kirova.

VERESHCHAGINA, N.N.; POSTOVSKIY, I.Ya.; MERTSALOV, S.L.

Benzodiazine series. Part 7: 1-(2-R-quinazolyl)-4 R'-thiosemicarbazides and their properties. Zhur. org. khim. 1 no.6:1154-1158 Je '65. (MIRA 18:7)

1. Ural'skiy politekhnicheskiy institut institut imeni Kirova.

MERTSALOV, V.

"Voeikov" sails south. Znan.sila 37 no.3:28-31 Mr '62. (MIRA 15:4)

(Voyages and travel) (Oceanographic research)

MERTSALOV, V.

[Enslaved economy] Zakreposhchennoe khoziaistvo. Miunkhen, Izd. TSentr. ob"edineniia polit.emigrantov iz SSSR (TsOPE), 1958. 61 p. (MIRA 11:5)

(Agricultural policy)

METSALOV, V.G.

Konitzberg filtration and ozonization plant supplying water to Bern. (MIRA 11:6)
Vod. i san. tekh. no.5:36-38 My '58.
(Konitzberg, Switzerland--Water--Ozonization)

MERTSALOV, V.G.

Mobile units for chemical cleansing of low-pressure boilers. (MIRA 12:2)
Vod. i san.tekh. no.2:37-39 F '59.
(Boilers--Incrustations)

LEBEDEV, Lev Georgiyevich; MERTSALOV, Valentin Grigor'yevich; MELENT'YEVA, V., red.; NAZAROVA, A., tekhn. red.

[At various latitudes] Na raznykh shirotakh. Moskva, Izd-vo "Znanie," 1963. 125 p. (MIRA 16:11)
(Voyages and travels)

S/050/60/000/06/11/021
B007/B007

AUTHORS: Lyubanskiy, V. A., Mertsalov, V. G.

TITLE: From the Experience Gained by Working With a Wave-meter ГМ-16 (GM-16)

PERIODICAL: Meteorologiya i gidrologiya, 1960, No. 6, pp. 32-34

TEXT: A report is given of the working experience gained on a 1,600 ton vessel sailing on the Atlantic. Besides hydrological measurements, also the motion of the waves was investigated by means of the wave-meter of the type ГМ-16 (GM-16) of the Vilenskiy-Glukhovskiy-system. (GOIN). This new device was tested in 1956 by the Mezhvedomstvennaya komissiya (Inter-departmental Commission) and was released for series production. The first specimens were used on various expeditions on the Caspian Sea and during the 3-'ya Kompleksnaya antarkticheskaya ekspeditsiya (Third Comprehensive Antarctic Expedition) on the e/s "Ob'" (Expedition Vessel "Ob'"). The device was in operation for nearly three weeks on the Atlantic Ocean. It is based upon the hydrostatic mode of action. The

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From the Experience Gained by Working With a Wave-meter ГМ-16 (GM-16)

S/050/60/000/06/11/021
B007/B007

individual assemblies of this device and its mode of operation are described. The work carried out with it is described, and some recommendations are made on the basis of the experience gained for using the device as well as for its improvement. There is 1 Soviet reference.

Card 2/2

RZHEPLINSKIY, G.V.; MERTSALOV, V.G.

Nomograms for calculating wave periods and heights in the deep sea from atmospheric pressure gradients. Trudy GOIN no.54:61-66 '60. (MIRA 14:4)

(Waves) (Nomography(Mathematics))

MERTSALOV, V.G.; RZHEPLINSKIY, G.V.

Practice of compiling prognoses of ocean waves under shipboard conditions. Meteor. i gidrol. no.10:44-46 O '62. (MIRA 15:9)

1. Gosudarstvennyy okeanograficheskiy institut.
(Waves)

MERTSALOV, V.G.

Further improvement of nomograms for calculating ocean wind waves from atmospheric pressure gradients. Trudy GOIN no.74: 75-86 '63. (MIRA 16:7)

(Waves)

MERTSALOV, V.I., inzhener.

Test rod for measuring gaps in VMG-133 switches. Rats. i izobr. predl. v stroi. no.150:29-32 '56. (MIRA 10:5)
(Electric switchgear)

L 8721-65 EEO-2/EWT(1)/EEC-4/EED-2/EWA(h) Pn-4/Peb/Pl-4 SSD/ASD(a)-5/AFWL/ESD(c)/ESD(gs)/ESD(t)

ACCESSION NR: AP4038176 S/2690/63/005/006/0257/0262

AUTHOR: Mertsalov, V. M.; Skotar', S. A.

TITLE: Infralow-frequency high-power noise generator

SOURCE: AN LatSSR. Institut elektroniki i vy*chislitel'noy tekhniki. Trudy*, v. 5, 1963. Avtomatika i vy*chislitel'naya tekhnika (Automation and computer engineering), no. 6, 257-262

TOPIC TAGS: noise generator, infrasonics, noise spectrum, correlation function, spectral density

ABSTRACT: A high-power noise generator is described for use in investigations of automatic control systems at very low frequencies. The functional diagram is illustrated in Fig. 1 of the Enclosure. The electric connections are shown in Fig. 2, and one of the possible construction variants is shown in Fig. 3. Its primary noise source is the variable conductance between electrodes placed in a spray of conducting liquid. The random changes in conductivity are converted into random relay signals fed to a bridge, the output of which is a random

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ACCESSION NR: AP4038176

signal whose power is determined by the source rating. The relative frequency of relay operation can be varied over a wide range by using different relay combinations and also by varying the supply voltage. The generator can prove useful in the investigation of real systems that draw large amounts of power. Orig. art. has: 5 figures and 3 formulas.

ASSOCIATION: Institut elektroniki i vy°chislitel'noy tekhniki AN LatSSR (Institute of Electronics and Computing Technology, AN LatSSR)

SUBMITTED: 00 DATE ACQ: 04Jun64 ENCL: 02

SUB CODE: GP, IE NR REF SOV: 002 OTHER: 000

Card 2/4

L 8721-65
ACCESSION NR: AT4038176

ENCLOSURE: 01

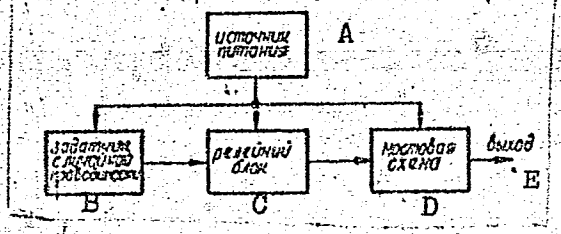

Fig. 1. Functional diagram of noise generator

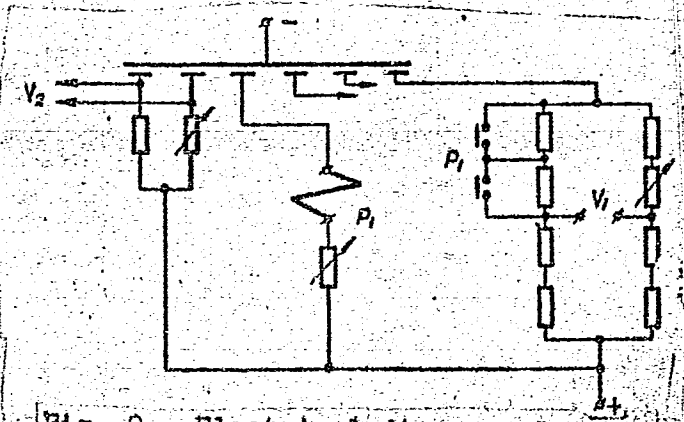

Fig. 2. Electrical diagram of noise generator

A - power supply, B - random conductivity unit, C - relay block, D - bridge circuit, E - output, P_1 - relay

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L 8721-65

ACCESSION NR: AT4038176

ENCLOSURE: 02

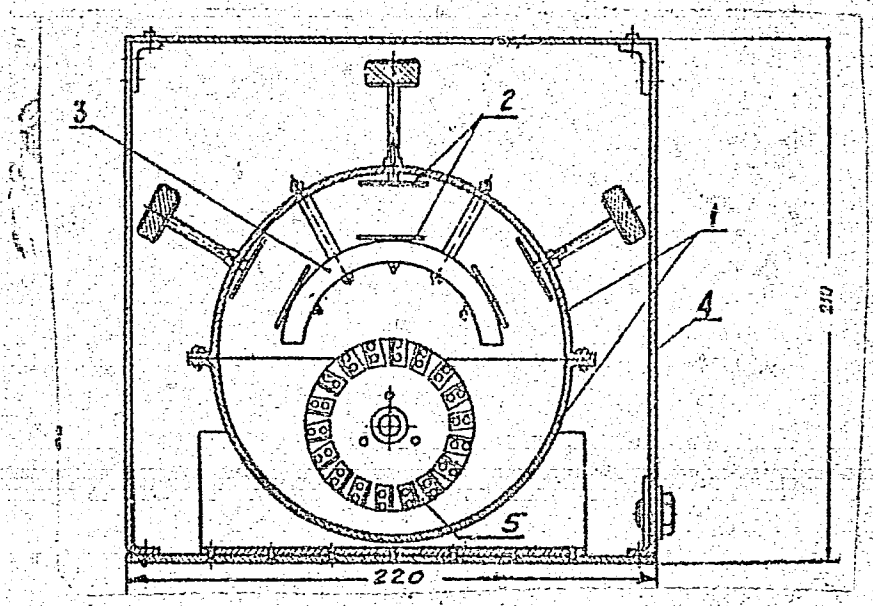

Fig. 3.
Construction of generator

1 - envelope of random conductivity unit

2 - electrodes with adjustable gap

3 - insulating plate

4 - housing

5 - motor driven impeller

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L 06987-67 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(1)
ACC NR: AT6018283 SOURCE CODE: UR/3192/65/000/010/0145/0150

AUTHOR: Mertsalov, V. M.; Mirtov, V. K.

ORG: none

TITLE: Reference generator of random parametric disturbances with an adjustable correlation coefficient

SOURCE: AN LatSSR. Institut elektroniki i vychislitel'noy tekhniki. Avtomatika i vychislitel'naya tekhnika, no. 10, 1965, 145-150

TOPIC TAGS: automatic control R and D, random impulse generator

ABSTRACT: One of the possible methods of statistically testing a system subjected to random disturbances is considered. The method can be used for evaluating the effect of component-parameter spread on the performance of an automatic control system. A reference generator of random parametric disturbances would be necessary for such tests; it may consist of a random-signal generator, a correlation-forming unit, and a storage unit. In an experimental

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L 06987-67
ACC NR: AT6018283

hookup, a random signal generator was based on the fluctuation of conductance of liquid splashes which produced a large number of practically noncorrelated random signals. Standard equipment was used for the forming and storage units. The initial-circuit time constant was 1 nsec. Storage-unit output voltages were measured every sec. The discrepancy between the theoretical and experimental correlation coefficients was found to be within 10%. Orig. art. has: 3 figures, 14 formulas, and 1 table.

SUB CODE: 09,12/ SUBM DATE: none / ORIG REF: 002

Card 2/2 LC

MERTSALOV, VLADIMIR SERGEYEVICH

KRYLOV, K.

LUDIN, L.

Kissledovaniyu Problem Psikhologicheskoy Voyny (Concerning the Problem of Psychological Warfare, by) Sbornik Statey. V. S. Mertsalov, K. Krylov 1 L. Ludin. Myunkhen, Istkult, 1955

132 p.

Summaries in English, French and German.

At Head of Title: Institut Po Izucheniyu Istorii 1 Kul'Tury SSSR.

Mertsalov Ye. N.

USSR/Medicine - Brill's Disease FD-1623

Card 1/1 : Pub. 14?-3/28

Author : Mertsalov, Ye. N.; Tungachina, Z. M.; Bendyukova, L. Ye; and Volynets, A. D.

Title : The problem of secondary exanthematous typhus in the Kazakh SSR

Periodical : Zhur. mikro. epid. i immun. 7, 11-13, Jul 1954

Abstract : Data on secondary exanthematous typhus [Brill's disease] obtained in epidemiological investigations carried out by epidemiologists in Kazakh SSR rayon and city sanitary-epidemiological stations in conjunction with scientific workers of the Kazakh Institute of Epidemiology and Microbiology are discussed. A brief statistical analysis of the data is given. One Soviet reference is cited.

Institution : Kazakh Institute of Epidemiology, Microbiology and Hygiene (Dir. Z. A. Roshchina)

Submitted : November 4, 1953

LAPINA, F.Kh.; MERTSALOV, Ye.N.

Outbreak of epidemic hepatitis in student dormitories; preliminary report. Vop.virus. 1 no.6:41-43 N-D '56 (MIRA 11:3)

1. Kazakhskiy institut epidemiologii, mikrobiologii i gigyeny, Alma-Ata.
(HEPATITIS, INFECTIOUS, epidemiol.
in Russia, outburst in student home)

MERTSALOV, Ye.N.; SAVICHEVA, L.A.; TRAVINA, L.P.

Carrying of dysentery bacteria by healthy children in a kindergarten (author's abstract). Pediatriia 39 no.3:48-49 My-Je '56. (MLRA 9:9)

1. Iz Kazakhskogo instituta epidemiologii, mikrobiologii i gigiyeny (dir. Z.A.Roshchina, nauchnyy rukovoditel' - chlen-korrespondent AN Kazakhskoy SSSR Kh.Zh.Zhumatov)
(DYSENTERY)

KARAKULOV, I.K.; MERTSALOV, Ye.N; CHOKIN, A.P.

Certain aspects of prevention of infectious diseases in the Kazakh Republic. Zhur.mikrobiol.epid. i immun. 28 no.10:11-14 O '57. (MIRA 10:12)

1. Iz kafedry epidemiologii Kazakhskogo gosudarstvennogo meditsinskogo instituta.

(COMMUNICABLE DISEASES, prevention and control, in Russia (Rus))

KARAKULOV, I.K., prof., MERTSALOV, Ye.N., dots. BEKETAYEVA, A.M.

Aid of the department of epidemiology to public health agencies. Sov.zdrav. 17 no.11:50-51 N'58 (MIRA 11:10)

1. Iz kafedry epidemiologii (zav. - prof. I.K. Karakulov) Kazakhskogo meditsinskogo instituta (dir. - prof. I.S. Koryakin).
(PUBLIC HEALTH,
cooperation of med. schools with pub. health institutions (Rus))

KARAKULOV, I.K.; MERTSALOV, Ye.N.; BEKETAYEVA, A.M.

Results of activities of the Department of Epidemiology of the Kazakh Medical Institute. Zhur.mikrobiol.epid.i immun. 31 no.9: 141-142 S '60. (MIRA 13:11)

(KAZAKHSTAN--EPIDEMIOLOGY)

SMIRNOV, S.M.; MERTSALOV, Ye.N.; BUSHILA, V.T.

Reviews, criticism and bibliography. Zhur. mikrobiol., epid. i immun. 40 no.11:148-155 N '63. (MIRA 17:12)

CHISTYAKOV, A.D.; BURKOVA, M.V.; ORLOVA, Ye.M.; GLAZOVA, O.P.; PED', D.A.; BERLYAND, M.Ye.; ABRAMOVICH, K.G.; POPOVA, T.P.; MATVEYEV, L.T.; BACHURINA, A.A.; LEBEDEVA, N.V.; PESKOV, B.Ye.; ROMANOV, N.N.; VOLEVAKHA, N.M.; PCHELKO, I.G.; PETRENKO, M.V.; KOSHELENKO, I.V.; PINUS, N.Z.; SHMETER, S.M.; BATZAYEVA, T.F.; MININA, L.S.; BEL'SKAYA, N.N., nauchn. red.; ZVEREVA, N.I., nauchn. red.; KURGANSKAYA, V.M., nauchn. red.; MERTSALOVA, A.N., nauchn. red.; TOMASHEVICH, L.V., nauchn. red.; SAGATOVSKIY, N.V., otv. red.; KATIKOVSKAYA, A.B., red.

[Manual of short-range weather forecasting] Rukovodstvo po kratkosrochnym prognozam pogody. Leningrad, Gidrometeoizdat. Pt.2. Izd.2. 1965. 491 p. (MIRA 18:8)

1. Moscow. TSentral'nyy institut prognozov.

MERTSALOVA, M.N.; LYUBINSKAYA, A.G., redaktor; LOMILINA, L., tekhnicheskiy redaktor

[Sewing lightweight dresses] Poshivka zhenskogo legkogo plat'ia. Moskva, Vsesoiuznoe kooperativnoe izd-vo, 1953. 49 p. (MLRA 7:9)
(Dressmaking)

L 22034-66 EWT(1) GW

ACC NR: AT6006532 (N) SOURCE CODE: UR/2634/65/000/084/0243/0251

AUTHOR: Mertsalova, N. B.

ORG: State Oceanography Institute, Moscow (Gosudarstvennyy okeanograficheskiy institut)

TITLE: Temperature and salinity variation in the Norwegian Sea

SOURCE: Moscow. Gosudarstvennyy okeanograficheskiy institut. Trudy, no. 84, 1965. Voprosy morskoy meteorologii i okeanografii (Problems in marine meteorology and oceanography), 243-251

TOPIC TAGS: ocean property, hydrodynamics, hydrography, sea water

ABSTRACT: This paper describes an attempt to use dimensionless curves of predictability for treating deep-water hydrologic observations in the Norwegian Sea during the warm season. The author seeks to find an answer to the question: Is there a systematic pattern in space and time to the distribution of temperature and salinity in the ocean, and what is the probability of a particular value occurring? Data from the Norwegian Sea for the warm part of the year were chosen for analysis because of their abundance over the past 60 years. Variability of values was examined in three ways: 1) by determining the spatial distribution of variation in temperature and salinity, 2) by computing frequency from gradations in different values of the hydrologic elements, and 3) by generalizing the determined frequency in a dimensionless

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ACC NR: AT6006532

form. On the maps of plotted data three well-defined zones appear: 1) rather uniform (relatively invariant) water, 2) a frontal zone, and 3) a near-shore zone. Variation is rather large in the last two zones. There is a general tendency for the variation to decrease with depth, except for a layer where the reverse is true. For the central part of the sea, temperature predictions are equally reliable for any depth. For the near-shore zone, however, the temperature of the deeper water may be predicted more reliably, whereas, in the frontal zone, the temperature of the surface water is more surely defined. Salinity is much more variable in the surface layer everywhere and in the near-shore zone. By use of the dimensionless curves, the probability of observing a certain salinity above the mean value is the same in the frontal zone as in the central part of the sea, and it is the same at 100 m everywhere in the sea. For salinities below the mean value, the predictability is the same at the surface in the center of the sea and in the frontal zone, but, at depths of 100 m and more, this does not apply. Decline in salinity takes place chiefly in the surface layer. While not perfectly reliable, the method proposed by the author may prove rather useful in computerized treatment. Orig. art. has: 2 figures and 4 tables.

SUB CODE: 08/ SUBM DATE: none

Card 2/2 mst

MERTSALOVA, O. B.

AID P - 1448

Subject : USSR/Meteorology and Hydrology

Card 1/2 Pub. 71-a - 22/23

Authors : Various

Title : Chronicles

Periodical : Met. i gidro., 1, 66-67, Ja - F 1955

Abstract : 1) 3rd scientific conference of geophysicists of the Lithuanian SSR in May 1954 in Vil'nyus, reviewed by M. V. Sitich and A. I. Buz
2) Conference on questions of aeroclimatology in October 1954 in Tashkent, reviewed by O. B. Mertsalova

3) The IVth All-Union Scientific and Technical Conference of Hydro Electric Engineers on 26-29 October 1954 in Leningrad, reviewed by N. V. Somov.

4) A letter by Dr. of Agric. Sci. F. F. Davitaya to the editor mentioning a correction to be made in a previous issue of this periodical.

AID P - 1448

Met. i gidro., 1, 66-67, Ja. - F 1955

Card 2/2 Pub. 71-a - 22/23

Institution: Main Administration of the Hydrometeorological Service at the Council of Ministers of the USSR

Submitted : No date

MERTSALOVA, O.B.

Methods for the aeroclimatological processing of temperature data as suggested for the aeroclimatological manual. Trudy Tashk. geofiz.obser. no.11/12:14-17 '56. (MLRA 10:8)

1.TSentral'naya aerologicheskaya observatoriya.
(Atmospheric temperature)

MERTSALOVA, O.B.

Methods for calculating perennial mean monthly temperatures.
Trudy NIIAK no.1:114-130 '57. (MIRA 11:10)
(Atmospheric temperature)

80571

SOV/169-59-7-7174

3.5000
Translation from: Referativnyy zhurnal, Geofizika, 1959, Nr 7, pp 102 - 103 (USSR)

AUTHOR: Mertsalova, O.B.

TITLE: On the Accuracy of Computing the Average Monthly Velocities (for Many Years) of Wind in the Free Atmosphere

PERIODICAL: Tr. N.-i. in-ta aeroklimatol., 1958, Nr 5, pp 35 - 41

ABSTRACT: Proceeding from the formula $m = \frac{\sigma}{\sqrt{n}}$, wherein m is the statistical mean-error, σ is the root-mean-square deviation, and n is the number of observations, the author compiled the tables of the m-values for n-values from 10 to 500 and σ -values from 2 to 10. Moreover, on the basis of data of many years for each month, the σ -values are presented in the table from 5 stations located at various geographic latitudes; the values pertain to the levels: ground, 1.5 and 5 km, for 4 seasons of year. On the basis of the two tables mentioned, it can be determined that the accuracy of the mean velocity varies from

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On the Accuracy of Computing the Average Monthly Velocities (for Many Years) of Wind in the Free Atmosphere

0.1 to 0.4 m/sec and from 0.3 to 1.3 m/sec respectively for n = 500 and 50 and for σ -values changing from + 2 to + 9 m/sec. This method for determining the accuracy of computing the mean velocity of wind contains the following errors: 1) the curve of distribution of the frequency of wind velocity deviates from the normal Gauss error-distribution curve. In particular, that pertains to the lower layer of atmosphere up to an altitude of 1 km. 2) Observations from pilot balloons present essentially a selective method, because the pilot balloons are not launched, as a rule, when fogs, precipitations, low cloudiness, and strong winds occur. In result of the causes mentioned, the m-values computed by the formula are understated indeed. Basing on the statistical evaluation of the aerologic materials available the author assumes that the accuracy of the mean velocities of wind computed for $n > 300$ per month near the earth surface are greater than 1 m/sec in the lower layers and equal to 1 - 2 m/sec in the troposphere. For $n < 50$ the accuracy of determining the mean values of the velocity of wind amounts to 4 - 5 m/sec.

Card 2/2

M.I. Gol'tsman

BELYAYEVA, V.N.; MERTSALOVA, O.B.; PASHKOV, Z.D.

Use of the mean quadratic temperature departure and the height of isobaric surfaces in aeroclimatology. Trudy NIIAK no.16:20-27 '62. (MIRA 15:11)

(Meteorology)

ACCESSION NR: AT4028296 S/2667/63/000/024/0018/0022

AUTHOR: Gavrilova, Z. I.; Mertsalova, O. V.

TITLE: Method of treating radio sounding observations for calculating the standard atmosphere

SOURCE: Moscow. Nauchno-issledovatel'skiy institut aeroklimatologii. Trudy*, no. 24, 1963, 18-22

TOPIC TAGS: standard atmosphere, atmospheric temperature, atmospheric pressure, atmospheric density, radio sounding observation, aerological station

ABSTRACT: The authors describe the utilization of material obtained from radio sounding observations and the method of its processing for obtaining temperature characteristics and pressure by latitude belts and, as a whole, for the northern hemisphere. Material is obtained from 225 stations on the northern hemisphere for the period covering January 1950 through June 1956. 145 of these stations were selected for calculating the standard atmosphere. The stations were located non-uniformly in the northern hemisphere. Best observations came from Europe, Japan, and North America. Observations were made on islands and on several weather ships in the oceans. The number of stations and observations per latitude are presented

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ACCESSION NR: AT4028296

in a table. An average interlatitude temperature was assumed in the calculations of the standard atmosphere. The majority of radio soundings were accomplished in the IGY (1957-59). In view of the comparatively small number of observations made at great altitudes, all the primary processing was produced by season. No less than 10 observations were used for determining average values, and no less than 50 in each region were used for determining recurrences of observations. Orig. art. has: 3 tables

ASSOCIATION: Nauchno-issledovatel'skiy institut aeroklimatologii (Scientific Research Institute of Aeroclimatology)

SUBMITTED: 00 DATE ACQ: 16Apr64 ENCL: 00

SUB CODE: AS NO REF SOV: 006 OTHER: 000

Card 2/2

ACCESSION NR: AT4028297 S/2667/63/000/024/0023/0053

AUTHOR: Mertsalova, O. B.; Sokolova, M. V.; Sy*cheva, Ye. F.

TITLE: Climatic characteristics of the temperature in a model of the standard atmosphere

SOURCE: Moscow. Nauchno-issledovatel'skiy institut aeroklimatologii. Trudy*, no. 24, 1963, 23-53

TOPIC TAGS: meteorology, standard atmosphere, air temperature, climate, climatology, troposphere, stratosphere

ABSTRACT: Vertical cross-sections have been constructed for a mean meridian, as well as curves showing the distribution of temperature with height for various latitudes. The method for constructing the cross-sections and curves is described. A method is also described for computation of the temperature of the boundaries of the confidence intervals. The distribution of temperature with height on standard days is given. Standard days are classified as polar night, polar day, hot day, cold day and tropical day. The figures and tables, which are analyzed in the text, reveal much of the content and scope of the article. Figure 1 -- Annual meridional temperature cross-section; Figure 2 -- Seasonal meridional temperature cross-section; Figure 3 -- Curves of the vertical distribution of temperature by latitude

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ACCESSION NR: AT4028297

zones during the year; Figure 4 -- Curves of the vertical distribution of temperature by latitude zones during the winter; Figure 5 -- Curves of vertical distribution of temperature by latitude zones during the summer; Figure 6 -- Distribution of temperature by latitude as a function of height; Figure 7 -- Histograms of frequency of temperatures over the northern hemisphere; Figure 8 -- Determination of the temperature of boundaries of confidence intervals; Figure 9 -- Distribution of temperature of different probabilities in the tropical zone during the year; Figure 10 -- Distribution of the temperature of different probabilities in the temperate zone during the year; Figure 11 -- Distribution of the temperature of different probabilities in the polar zone during the year; Figure 12 -- Distribution of the temperature of different probabilities in the northern hemisphere during the year; Figure 13 -- Distribution of temperature with height in the polar night and polar day; Figure 14 -- Distribution of temperature with height on cold and warm days; Figure 15 -- Distribution of temperature with height over the tropics, in the middle latitudes and as a mean for the northern hemisphere. The tables supply statistical data used in constructing the figures. The characteristics of the different classes of standard days are described in detail. Orig. art. has: 1 formula, 15 figures and 3 tables.

ASSOCIATION: Nauchno-issledovatel'skiy institut aeroklimatologii, Moscow

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ACCESSION NR: AT4028297

(Scientific Research Institute of Climatology)

SUBMITTED: 00	DATE ACQ: 16Apr64	ENCL: 00
SUB CODE: AS	NO REF SOV: 019	OTHER: 008

Card 3/3

ACCESSION NR: AT4028298 S/2667/63/000/024/0054/0058

AUTHOR: Mertsalova, O. B.; Sokolova, M. V.

TITLE: Mean and extreme pressure values

SOURCE: Moscow. Nauchno-issledovatel'skiy institut aeroklimatologii. Trudy*, no. 24, 1963, 54-58

TOPIC TAGS: atmospheric pressure, northern hemisphere, seasonal pressure, annual pressure, standard pressure, latitude belt

ABSTRACT: The authors describe a method of calculating mean pressure distribution at altitudes for three latitude belts and for the entire northern hemisphere as well as a method of obtaining extreme pressure values. The three latitude belts are the tropic (0-30°NL), temperate (30-60°NL), and polar (60-90°NL). Processing of observations above the altitude of isobaric surfaces, according to the separate stations for obtaining the mean values by region and latitude belts, was produced by the method previously described by Z. I. Gavrilova and O. B. Mertsalova (this issue). The number of observations used for determining mean altitudes is the same as for temperature. The values of the extreme air pressure in the northern hemisphere and the mean annual air pressure is plotted in Fig. 1. The differences of seasonal

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ACCESSION NR: AT4028298

mean pressures are presented in tables for the three zones, as well as for the northern hemisphere as a whole. Orig. art. has: 3 tables and 1 figure.

ASSOCIATION: Nauchno-issledovatel'skiy institut aeroklimatologii (Scientific Research Institute of Aeroclimatology)

SUBMITTED: 00	DATE ACQ: 16Apr64	ENCL: 01
SUB CODE: AS	NO REF SOV: 006	OTHER: 000

Card 2/3

ACCESSION NR: AT4028298

ENCLOSURE: 01

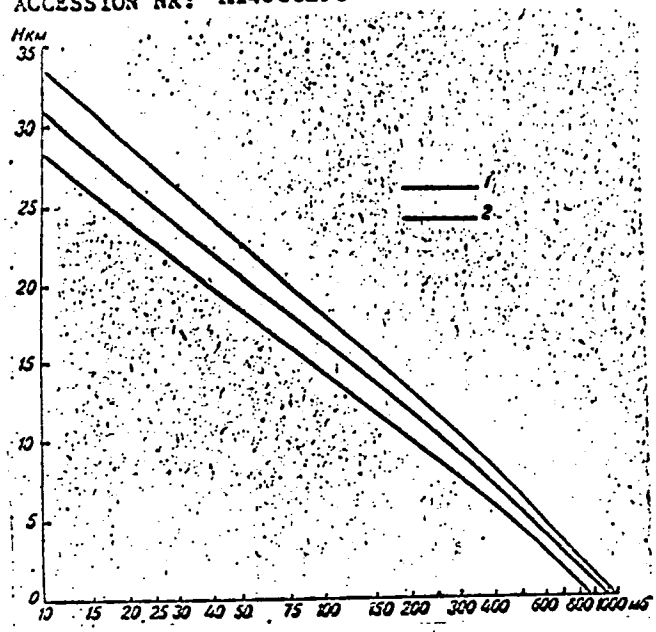

Fig. 1 Distribution of mean annual (1) and extreme (2) air pressure (MB) in the northern hemisphere

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ACCESSION NR: AT4028299 S/2667/63/000/024/0059/0060

AUTHOR: Mertsalova, O. B.

TITLE: Calculation of air density

SOURCE: Moscow. Nauchno-issledovatel'skiy institut aeroklimatologii. Trudy*, no. 24, 1963, 59-60

TOPIC TAGS: air density, northern hemisphere, latitude belt, mean density, isobar surface

ABSTRACT: In this paper the author presents a method of calculating mean density values for three latitude belts and the entire northern hemisphere as well as the principle density intervals. Air density in radio sounding observations was not directly observed. The mean seasonal and annual density values for the tropic, temperate and polar belts, as well as for the entire northern hemisphere, were calculated by the mean temperature and pressure values for the corresponding belts. Calculations were derived by the formula

$$\rho = \frac{p}{RT} \qquad (1)$$

where p is the air pressure in millibars, T is the temperature in ^{o}K, R is the

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ACCESSION NR: AT4028299

specific gas constant equal to 2.870386 x 10^{-6} erg/g degree. Humidity was not considered in the density calculations. The results are presented in Fig. 1. Linear interpolation was used for the differences between the reference altitudes. Orig. art. has: 1 formula and 1 figure.

ASSOCIATION: Nauchno-issledovatel'skiy institut aeroklimatologii (Scientific Research Institute of Aeroclimatology)

SUBMITTED: 00	DATE ACQ: 16Apr64	ENCL: 01
SUB CODE: AS	NO REF SOV: 000	OTHER: 000

Card 2/3 2

L 26530-66 EWT(1)/FCC GW

ACC NR: AT5028832 SOURCE CODE: UR/2667/65/000/030/0003/0017

34
B+1

AUTHOR: Mertsalova, O.B.

ORG: none

TITLE: Methods for the computation of the vertical correlations of temperature and pressure in the free atmosphere and some consequences of the results obtained

SOURCE: Moscow. Nauchno-issledovatel'skiy institut aeroklimatologii. Trudy, no. 30, 1965. O korrelyatsionnykh zavisimostyakh temperatury i davleniya v svobodnoy atmosfere (Correlations of temperature and pressure in the free atmosphere), 3-17

TOPIC TAGS: stratosphere, atmospheric sounding, troposphere, atmospheric pressure, atmospheric temperature, data correlation

ABSTRACT: The paper describes the data and the methods used for the computation of correlation coefficients of temperature and pressure in the free atmosphere. Correlations between temperatures at various altitude levels and cross-correlation between temperature and pressure was studied. One aim was to extend the range of altitudes of the correlation studies to include both the troposphere and the stratosphere. The scope of geographical coverage was also extended; data from 19 stations of the Northern hemisphere were used. The calculations were made on analytical computing machines and on the BV-80 perforating electronic computer. The basic meteorological data were extracted from aerological telegrams of the International Geophysical Year and the Inter-

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ACC NR: AT5028832 0

national Geophysical Cooperation (1957-1960). The correlation coefficients were computed for the temperatures at the surface and at the 850, 700, 500, 300, 200, 100 and 50 mb levels. Pressure at the station level was correlated with the heights of all isobaric surfaces. The determination of crosscorrelation matrices between temperature and pressure was done at all available isobaric heights. The number of statistical samples at each height was never less than 100. Altogether, the data supplied from about 10000 radio-telemetered soundings were evaluated. A discussion of the requirement for statistical independence of the data is included. An analysis of the mean square deviations of interlayer temperature differences is given for 5 stations, computed from the correlation coefficients between temperatures on adjacent isobaric surfaces. Calculations were made for four calendar seasons. A discussion of the various results of the analysis completes the paper. Orig. art. has 10 formulas, 7 tables.

SUB CODE: 04 SUBM DATE: 00 ORIG REF: 018 OTH REF: 002

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L 26532-66 EWT(1)/FCC GW

ACC NR: AT5028834 SOURCE CODE: UR/2667/65/000/030/0063/0071

AUTHOR: Mertsalova, O.B.; Sokolova, M.V.

24
B+1

ORG: none

TITLE: Statistical relationships between pressure at various levels in the free atmosphere

SOURCE: Moscow. Nauchno-issledovatel'skiy institut aeroklimatologii. Trudy, no. 30, 1965. O korrelyatsionnykh zavisimostyakh temperatury i davleniya v svobodnoy atmosfere (Correlations of temperature and pressure in the free atmosphere), 63-71

TOPIC TAGS: free atmosphere, atmospheric pressure, atmospheric sounding

ABSTRACT: This article discusses statistical relationships and correlation between free atmosphere pressures at various altitude levels, for 19 stations of the northern hemisphere and for two seasons (winter and summer). Methods for the calculation of the pressure correlation coefficients have been described before by one of the authors, O.B. Mertsalova, in this publication, 1965, 3-17. The data used were obtained during 1957-1960 by radiosounding ascents, all exceeding the 25 km height, for the ground level and the following altitudes of the isobaric levels of 850, 700, 500, 300, 200, 100, and 50 mb. Some 30 mb and 20 mb data were also used. Computational processing and

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ACC NR: AT5028834

analysis of the data exposed definite regularities in the distribution of correlation coefficients with altitude at various latitudes, and some geographical and seasonal features. Northern and moderate latitude stations have substantial positive coefficients of correlation, with a smooth, moderate decay with increasing interlevel distance. Tropical latitude stations have smaller correlation coefficients, which show a more rapid decay with increasing interlevel distance. Thus in the South, the correlation coefficients between the surface pressure and pressure at altitude are usually passing thru zero for altidude levels of 10 km. The authors present several conclusions about the behaviour of the mean square deviation of pressure. They find, e.g. that it 1) is relatively very large at ground level 2) has larger magnitudes in the North, 3) is practically independent of altitude in the South. Evidence of the very small correlation coefficients in the South is examined in the light of possible presence of non-linear constraints. Analysis shows that the substantial stability of the gross meteorological process in the South leaves the pressure differences between levels dependent largely upon the variation of the local pressure gradients. Thus the coefficients are sensitized to the small but random variations of the pressure gradients. Orig. art. has 6 figures, 3 formulas and 3 tables.

SUB CODE: 04 SUBM DATE: 00 ORIG REF: 017 OTH REF: 001

Card 2/2

L 26533-66 EWT(1)/FCC GW

ACC NR: AT5028835 SOURCE CODE: UR/2667/65/000/030/0092/0101

26
B+1

AUTHOR: Kertsalova, O.B.; Fedorova, A.M.

ORG: none

TITLE: Correlation between temperature and pressure in the free atmosphere over the northern hemisphere

SOURCE: Moscow. Nauchno-issledovatel'skiy institut aeroklimatologii. Trudy, no. 30, 1965. O korrelyatsionnykh zavisimostyakh temperatury i davleniya v svobodnoy atmosfere (Correlations of temperature and pressure in the free atmosphere), 92-101

TOPIC TAGS: free atmosphere, atmospheric pressure, atmospheric temperature, troposphere, stratosphere

ABSTRACT: To gain insight into the crosscorrelation between temperature and pressure in the troposphere and in the stratosphere, crosscorrelation coefficients between temperature and pressure were computed at the whole range of available altitude level data, from station ground level, to 25 - 28 km heights. The results are presented in form of graphs depicting isocorrelate lines (lines of equal crosscorrelation coefficients) as functions of temperature at a given height H_1 (abscissa), and pressure at a desired pressure-correlating height H_2 (ordinate). Graphs are presented for three representative latitude groups: Keflavik - northern; Rome - moderate and Aden - tropical. The basic relationships are clearly depicted in these graphs. All stations show zones

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L 26533-66

ACC NR: AT5028835

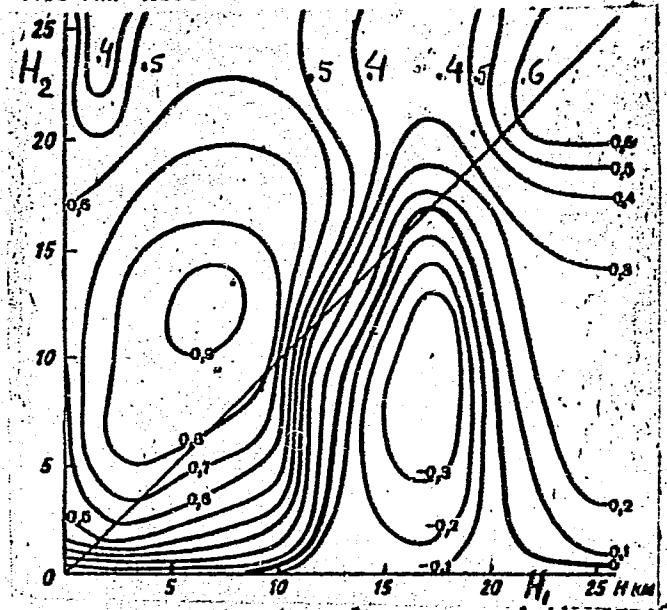

Fig. 1. Distribution of crosscorrelation coefficients between temperatures at height H_1 and pressures at Height H_2. Rome, Summer.

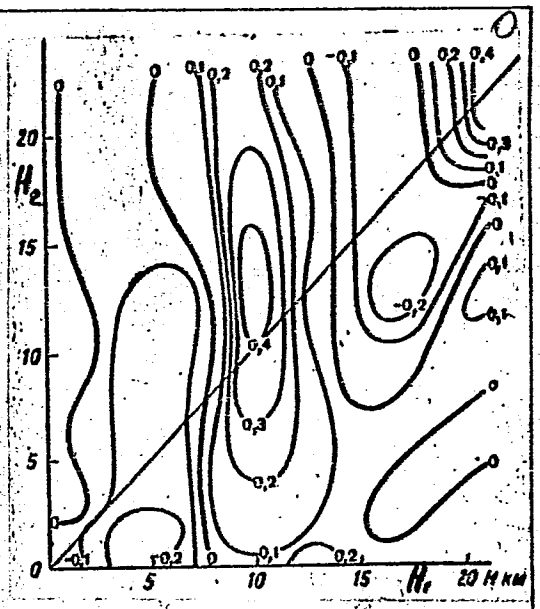

Fig. 2. Distributions of crosscorrelation coefficients between temperature at Height H_1 and pressure at height H_2. Aden, Summer.

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L 26533-66

ACC NR: AT5028835

of high positive correlation coefficients in the troposphere (e.g. between temperature at 6km and pressure at 12 km for Rome, summer); there is a zero crossing zone and negative correlation for 10 km temperatures and all other pressures; there is a zone of high negative correlation; and a zone of substantial correlation in the stratosphere. Correlation coefficients between temperature and pressure at the same height are located in the graph on a 45 degree line. The isocorrelate graphs are similar for the northern and the moderate latitudes, but quite different for the tropical latitudes. This can be seen by comparing the graphs shown in Fig. 1 (Rome) and Fig. 2 (Aden). The authors discuss these and other features of the hemispheric crosscorrelation picture in detail, with the additional consideration of the influence of seasons. They also note that the crosscorrelation coefficients between temperature and pressure at equal altitudes never attain the high values found for the correlation of certain lower altitude temperatures with higher altitude pressures. In these latter cases crosscorrelation coefficients as high as .8 - .9 occur. Thus the temperatures appear to be more significantly related to higher and lower altitude pressures than to pressures at their own levels. Orig. art. has 4 figures.

SUB CODE: 04 SUBM DATE: 00 ORIG REF: 009 OTH REF: 003

Card 3/3

L 26531-66 EWT(1)/FCC GW

ACC NR: AT5028836 SOURCE CODE: UR/2667/65/000/030/0119/0132

AUTHOR: Krylova, L.M.; Mertsalova, O.B.

ORG: none

TITLE: Variations of air density in the free atmosphere over certain regions of the northern hemisphere

SOURCE: Moscow. Nauchno-issledovatel'skiy institut aeroklimatologii. Trudy, no. 30, 1965. O korrelyatsionnykh zavisimostyakh temperatury i davleniya v svobodnoy atmosfere (Correlations of temperature and pressure in the free atmosphere), 119-132

TOPIC TAGS: free atmosphere, atmospheric density, atmospheric pressure, atmospheric temperature

ABSTRACT: Methods were developed for the determination of the root mean square deviation of the air density, using observation statistics of air pressure and temperature. The problem has recently gained importance due to progress in aviation and rocketry necessitating air density evaluations at higher altitudes. Geographical, altitude and seasonal distributions of density and of density deviations were computed and presented in form of graphs and tables, and their salient features discussed. The air density was calculated from the equation of state

$$\rho = P/RT_v \cdot 10^9 \text{ gr/m}^3 \qquad (1)$$

where ρ - air density in grams/meter, p - pressure in mb; R - gas constant, equal to

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2870.4 $\cdot 10^3$ ergs/gram.degree; T_v - virtual temperature. The humidity was neglected and actual temperature was used instead of the virtual. A punch card sorting method was devised to meet the difficulty in processing density data referred to isobaric instead

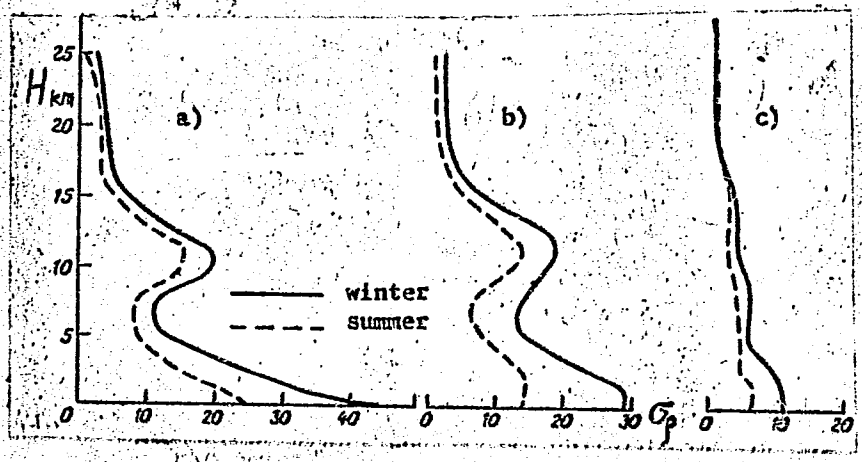

Fig. 1. Vertical distribution of the mean square deviation of air density for: a) Coral Harbor; b) Keflavik; c) San Juan.

of to the actual given altitude. Data processing was accomplished on an electronic com-

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ACC NR: AT5028836

puter. The air density deviation, σ_ρ is related to the deviations of pressure, σ_p, and temperature, σ_T, by the Dines formula (2):

$$\sigma_\rho = \rho \sqrt{\left(\frac{\sigma_p}{p}\right)^2 + \left(\frac{\sigma_T}{T}\right)^2 - 2r_{pt}\frac{\sigma_p}{p}\frac{\sigma_T}{T}}, \qquad (2)$$

where r_{pt} - is the correlation coefficient between pressure and temperature. The results revealed presence of disturbed layers, having increasing density deviations with altitude. Fig. 1 shows this phenomenon for three stations; it can be explained by the behaviour of the correlation coefficients, on the basis of (2). A physical explanation was found in the restructuring of the temperature fields in the passage from the tropospheric to the stratospheric regimes. Due to paucity of stations with high level data, no geographical map of density deviations was made. Instead, a density distribution was developed for a vertical section over a geographical line based on 12 stations, running from the Antile islands over North America and Canada (Edmonton) to Greenland, Iceland and over Central Europe to Aden in the south of the Arabian peninsula. The large deviations of density over Canada during winter show the result of frequent arctic air invasions down to the 50° latitude. Orig. art. has: 4 figures, 5 formulas and 2 tables.

SUB CODE: 04 SUBM DATE: 00 ORIG REF: 011 OTH REF: 001

Card 3/3

BROVIKOVA, A.S.; MERTSALOVA, O.B.

The latitudinal mean quadratic deviation of the temperature of the free atmosphere over the northern hemisphere. Trudy NIIAK no.30:133-145 '65. (MIRA 18:12)

MERTSALOVA, S. N.

Differences in alteration of the electrical properties of smooth muscle in rapid and in tonic contraction. [illegible] Aladzhalova and S. N. Mertsalova. *Doklady Akad. Nauk S.S.S.R.* 94, 213-16(1954); cf. [illegible] 73, [illegible].—An oscillographic study of the resistance and capacitance of the intact and excised *Anadonta* muscle specimens at [illegible] kc. and at 200 kc. applied a.c. under the conditions of tonic contraction under reflex action as well as under the condition of spontaneous contraction, showed that in tonic contraction resistance rises at both low and high frequencies of applied a.c.; in spontaneous contractions, which had the characteristics of phase contraction, the resistance drops at low-frequency a.c. and is unaltered at high frequency. Thus the tone of the muscle may be defined as a consequence of a decrease of the concn. of free ions in the substrate, an alteration of the colloidal matter leading to binding of the ions. In phase contraction notable shifts take place in the surfaces of the micelles with relaxation of the electrostatic forces connected with the functional protein complex of actomyosin. The results of resistance detns. are given graphically. G. M. Kosolapoff

Inst Biol. Physics, AS USSR

MERTSALOVA, N. A.

ALADZHALOVA, N.A.; MERTSALOVA, S.N.

Frequency range of anomalous dielectric lession in smooth muscles during the state of a "catch" tonus [with summary in English]. Biofizika 3 no.1:23-30 '58. (MIRA 11:2)

1. Institut biologicheskoy fiziki AN SSSR, Moskva. Arkhangel'skiy gosudarstvennyy meditsinskiy institut.
(MUSCLES) (ELECTROPHYSIOLOGY)

MERTSALOVA, S. N. Cand Biol Sci -- (diss) "Alteration of the electric parameters of the smooth muscles of mollusks during various types of contractions." Arkhangel'sk, 1959. 17 pp (Inst of Biol Phys, Acad Sci USSR. Arkhangel'sk State Med Inst), 220 copies (KL, 50-59, 125)

SHUL'TS, Yu.F.; MERTSALOVA, T.V.; SAVEL'YEVA, L.L. Prinimali uchastiye: SIZYAKINA, Ye.S.; KILACHITSKAYA, I.R.; MILLER, T.A., red.; LYUDKOVSKAYA, N.I., tekhn. red.

[Textbook of the Latin language]Uchebnik latinskogo iazyka. Pod obshchei red. IU.F.Shul'tsa. Moskva, Medgiz, 1962. 203 p. (MIRA 15:10)

1. Kollektiv kursa latinskogo yazyka Vtorogo Moskovskogo meditsinskogo instituta imeni N.I.Pirogova (for Shul'ts, Mertsalova, Savel'yeva, Sizyakina, Kilachitskaya).
(LATIN LANGUAGE--GRAMMAR) (MEDICINE--LANGUAGE)

MERTSALOVA, YE. N., KOSAVEL, V. M., SOKOLOVA, N. F., TIMONICH, O. P.

"Study of the bactericidal properties of the "khB" preparation."

report submitted at the 13th All-Union Congress of Hygienists, Epidemiologists and Infectionists, 1959.

MERTSALOVA, Ye. T.

"Clinical Observations Regarding Effect of Nonspecific Substances in Complex Treatment ofTuberculous Meningitis in Children." Cand Med Sci, Khar'kov Medical Inst, Khar'kov, 1955. (KL, No 14, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).

MIKHAYLENKO, Ye.A., prof.; MERTSEDIN, R.N.

Improving the design and increasing the durability of cultivator cutter-type blades. Trakt. i sel'khozmash. no.11:20-21 N '65.
(MIRA 18:12)

1. Zhitomirskiy sel'skokhozyaystvennyy institut.

MERTSLIN, M.S.

646. THREE CASES OF TUBERCULOSIS OF THE PALPEBRAL CONJUNCTIVA (Russian text) - Mertslin M.S. - TRUD.TURKMEN TRAKH.INST. 1956, 4 (147-152)

Literature data concerning the pathogenesis, clinical aspects and therapy of conjunctival tb are cited, and case notes on 3 children with conjunctival tb adduced. (S)

MERTSLIN, M.S.

710. PLASTIC CORRECTION OF CICATRICIAL LID EVERSIONS BY A FREE FLAP OF SKIN, TAKEN FROM THE AURAL PINNA (Russian text) - Mertslin M. S. - TRUD. TURKMEN. TRAKH. INST. 1956, 4 (153-162)

Data culled from the literature are presented concerning types of plastic operations, conditions necessary for normal healing of the free tissue flap, the methods of free skin plastic operations and the author's own experience; the plastic operations

were performed for the purpose of restoration of the conjunctival sac, of partial restoration of the conjunctival fornices in cases with coarse cicatricial changes with eversion of the lids of various aetiology, and of complete or partial restoration of the lids. Two case records are cited. (S)

MERTSLIN, M.S.; BERDYYEV, A.B.

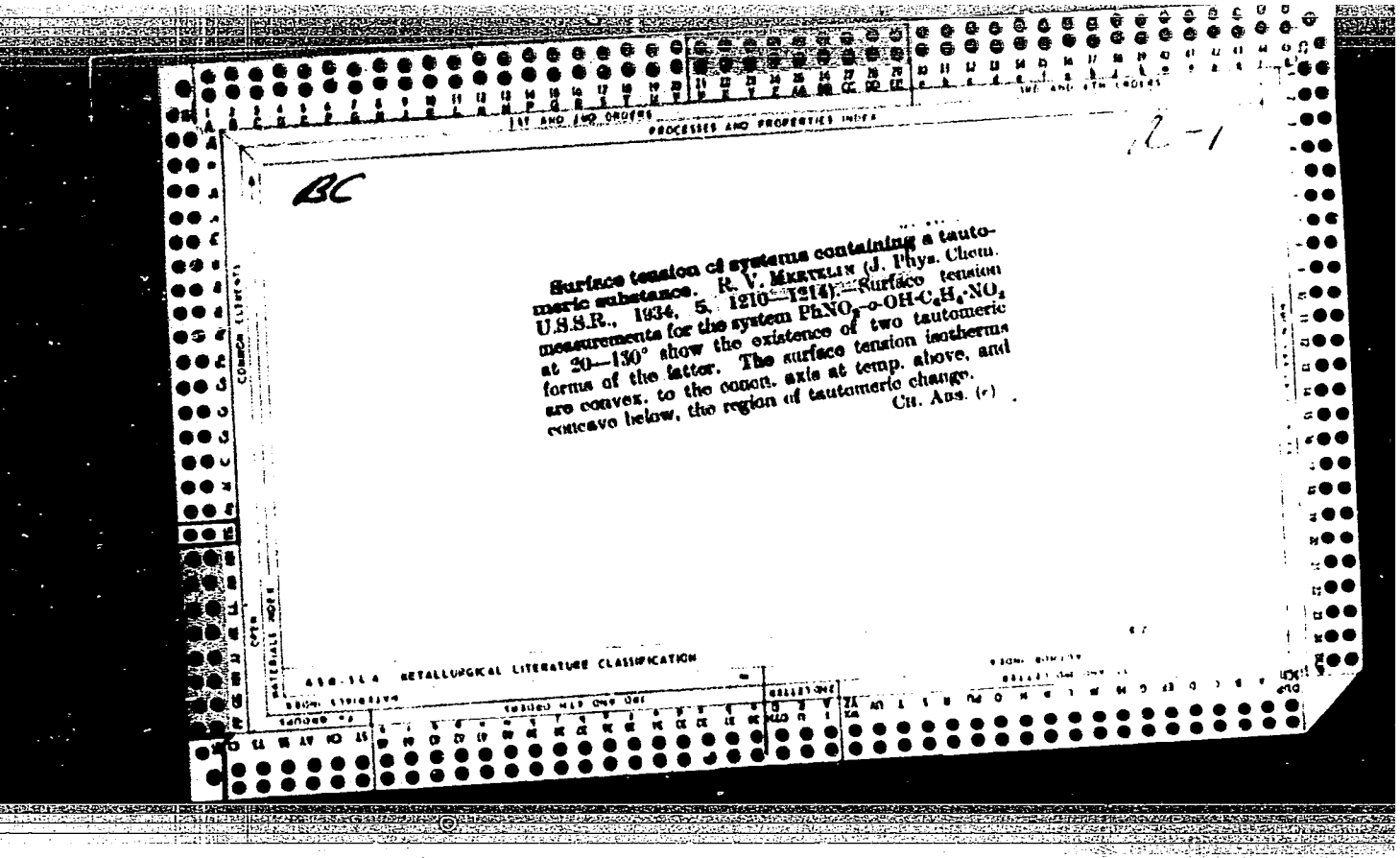
Our experience in organizing surgical treatment for patients with complicated forms of trachoma under the conditions of collective cotton farms in Turkmenia. Trudy Turk.nauch.-issl.trakh.inst. 6:17-20 '60. (MIRA 15:11)

(CONJUNCTIVITIS, GRANULAR)
(TURKMENISTAN--CONJUNCTIVA--SURGERY)

MERTSLIN, M.S., BERDYYEV, A.B.

Immediate results of operations for tracoma carried out in rural areas of Turkmenistan. Trudy Turk.nauch.-issl.trakh.inst. 6:21-24 '60. (MIRA 15:11)

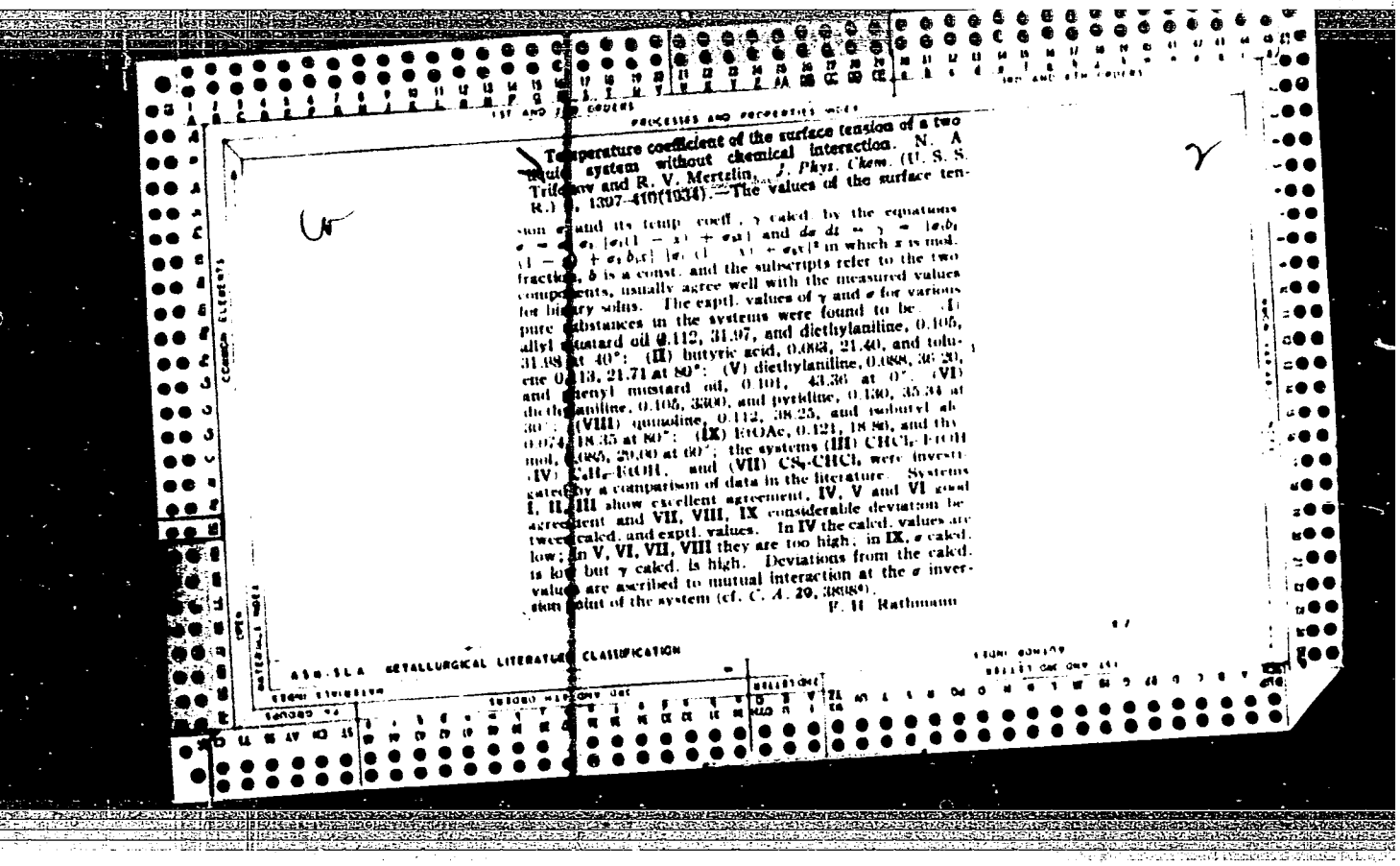
(TURKMENISTAN--CONJUNCTIVA--SURGERY)
(CONJUNCTIVITIS, GRANULAR)



BC

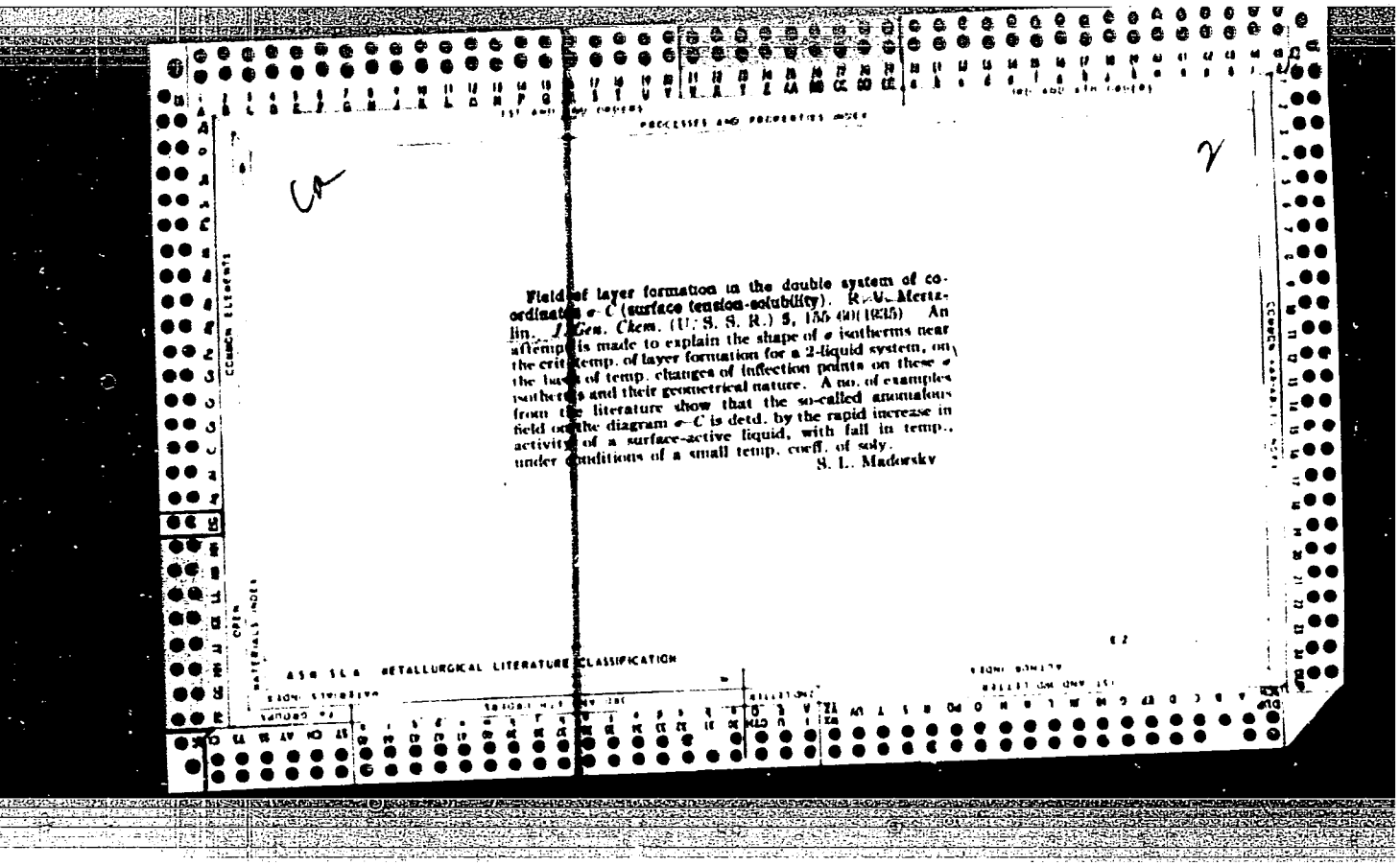
Surface tension of systems containing a tautomeric substance. R. V. Mertelin (J. Phys. Chem. U.S.S.R., 1934, 5, 1210—1214).—Surface tension measurements for the system $PhNO_2$–o-OH-C_6H_4·NO_2 at 30—130° show the existence of two tautomeric forms of the latter. The surface tension isotherms are convex, to the concn. axis at temp. above, and concave below, the region of tautomeric change.

Ch. Abs. (r)



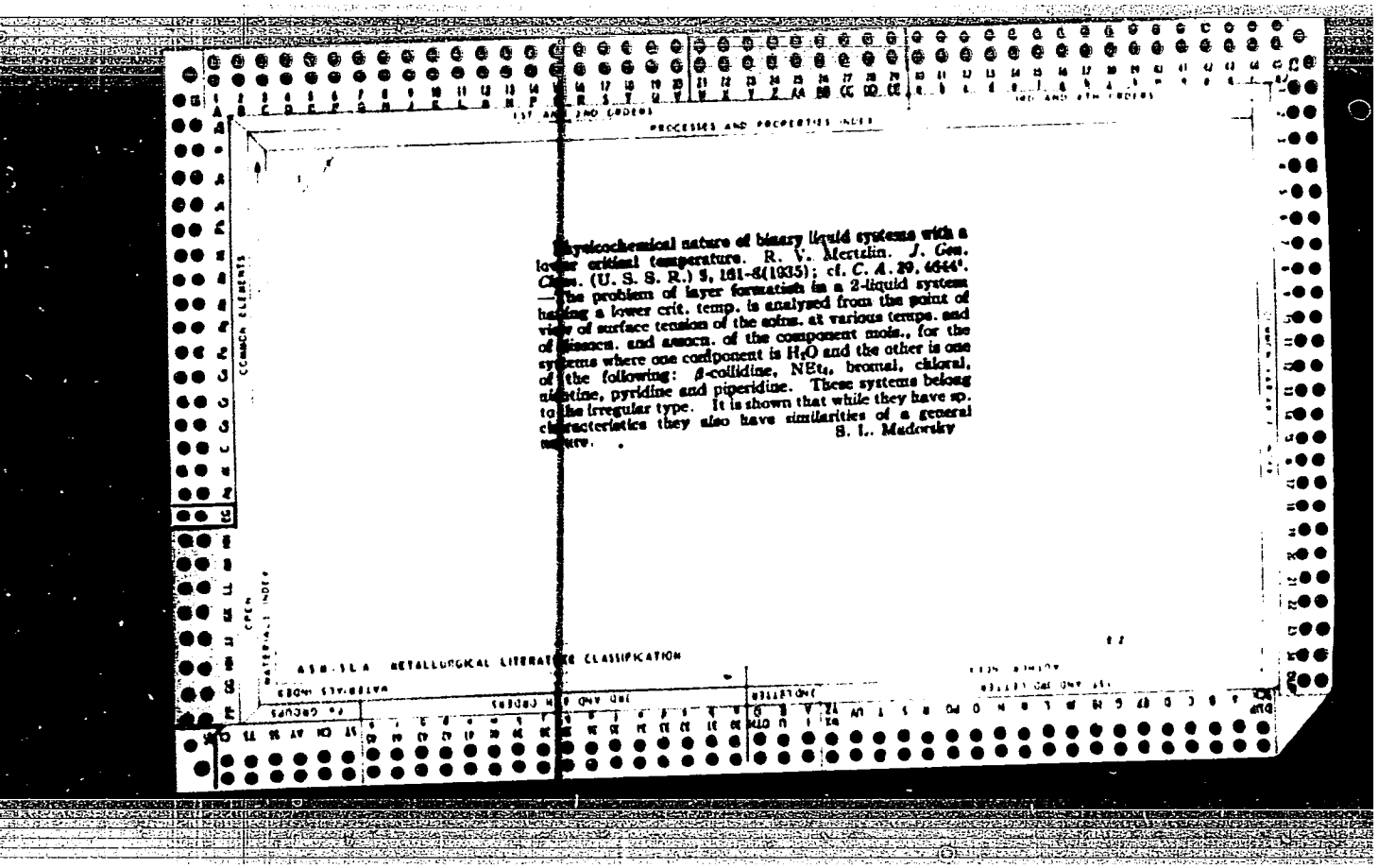
Temperature coefficient of the surface tension of a two liquid system without chemical interaction. N. A Trifonov and R. V. Mertslin. *J. Phys. Chem.* (U. S. S. R.), 1397-410(1934).—The values of the surface ten- sion σ and its temp. coeff., γ calcd. by the equations $\sigma = \sigma_1[\sigma_1(1 - x) + \sigma_{12}x] + \sigma_2[\sigma_2(1 - x) + \sigma_{12}x]$ and $d\sigma/dt = \gamma = [\sigma_1 b_1 (1 - x) + \sigma_2 b_2 x][\sigma_1(1 - x) + \sigma_{12}x]$ in which x is mol. fraction, b is a const. and the subscripts refer to the two components, usually agree well with the measured values for binary solns. The exptl. values of γ and σ for various pure substances in the systems were found to be: (I) allyl mustard oil 0.112, 31.97, and diethylaniline, 0.105, 31.88 at 40°; (II) butyric acid, 0.083, 21.40, and toluene 0.113, 21.71 at 80°; (V) diethylaniline, 0.088, 30.20, and phenyl mustard oil, 0.101, 43.36 at 0°; (VI) diethylaniline, 0.105, 3300, and pyridine, 0.130, 35.34 at 30°; (VIII) quinoline, 0.112, 38.25, and isobutyl alcohol, 0.074, 18.35 at 80°; (IX) EtOAc, 0.121, 18.80, and thymol, 0.085, 29.00 at 60°; the systems (III) $CHCl_3$-EtOH (IV) C_6H_6-EtOH, and (VII) CS_2-$CHCl_3$ were investigated by a comparison of data in the literature. Systems I, II, III show excellent agreement, IV, V and VI good agreement and VII, VIII, IX considerable deviation between calcd. and exptl. values. In IV the calcd. values are too low; in V, VI, VII, VIII they are too high; in IX, σ calcd. is low but γ calcd. is high. Deviations from the calcd. values are ascribed to mutual interaction at the σ inversion point of the system (cf. *C. A.* 29, 3888⁹).

P. H. Rathmann

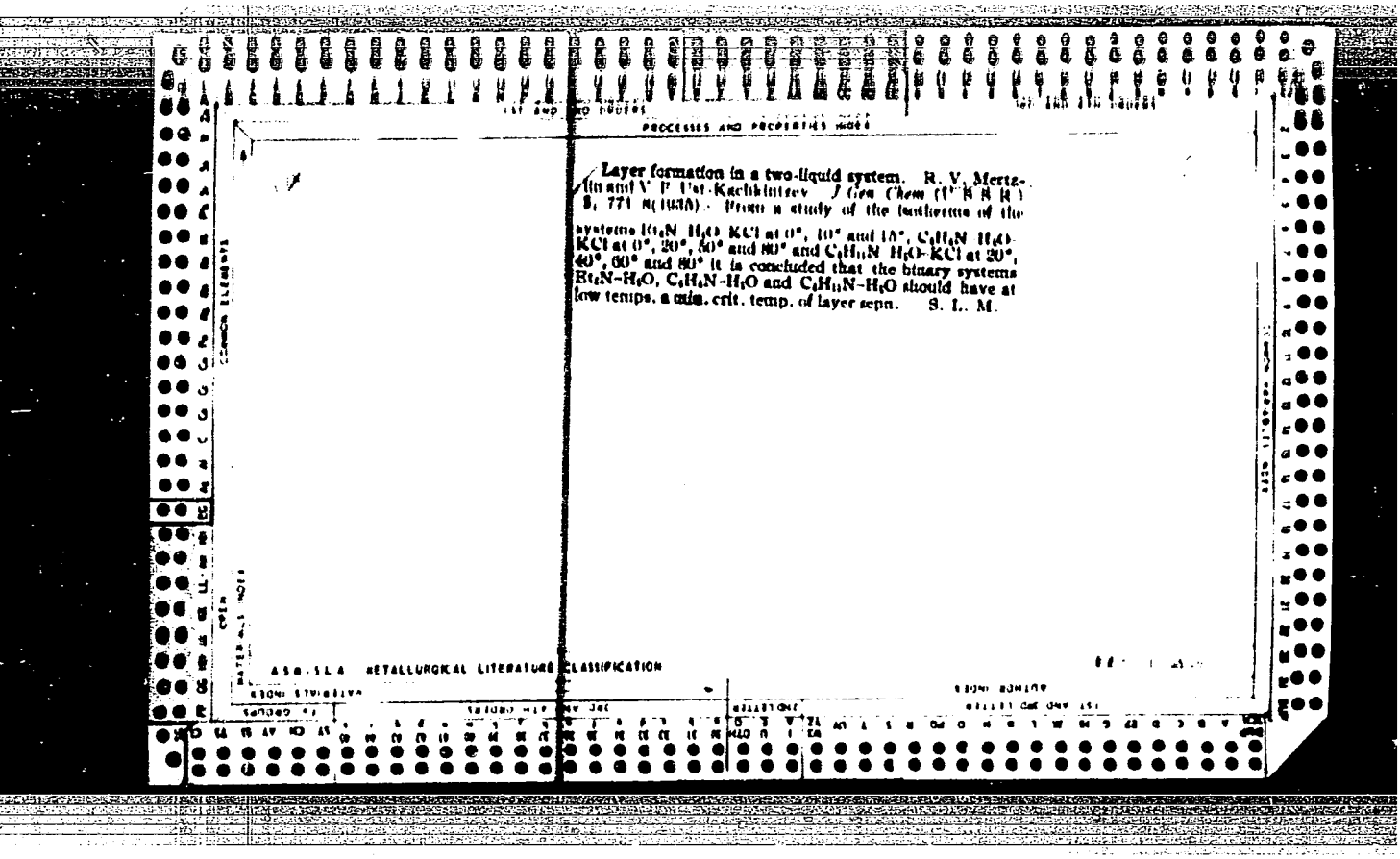


Field of layer formation in the double system of coordinates $\sigma - C$ (surface tension-solubility). R. V. Mertzlin. *J. Gen. Chem.* (U. S. S. R.) 5, 155-60 (1935). An attempt is made to explain the shape of σ isotherms near the crit. temp. of layer formation for a 2-liquid system, on the basis of temp. changes of inflection points on these σ isotherms and their geometrical nature. A no. of examples from the literature show that the so-called anomalous field on the diagram $\sigma - C$ is detd. by the rapid increase in activity of a surface-active liquid, with fall in temp., under conditions of a small temp. coeff. of soly.

S. L. Madorsky



Physicochemical nature of binary liquid systems with a lower critical temperature. R. V. Mertslin. *J. Gen. Chem.* (U. S. S. R.) 5, 181-8(1935); cf. *C. A.* 29, 4644⁹. The problem of layer formation in a 2-liquid system having a lower crit. temp. is analyzed from the point of view of surface tension of the solns. at various temps. and of dissocn. and assocn. of the component mols., for the systems where one component is H_2O and the other is one of the following: β-collidine, NEt_3, bromal, chloral, nicotine, pyridine and piperidine. These systems belong to the irregular type. It is shown that while they have sp. characteristics they also have similarities of a general nature.
S. L. Madorsky



PROCESSES AND PROPERTIES INDEX

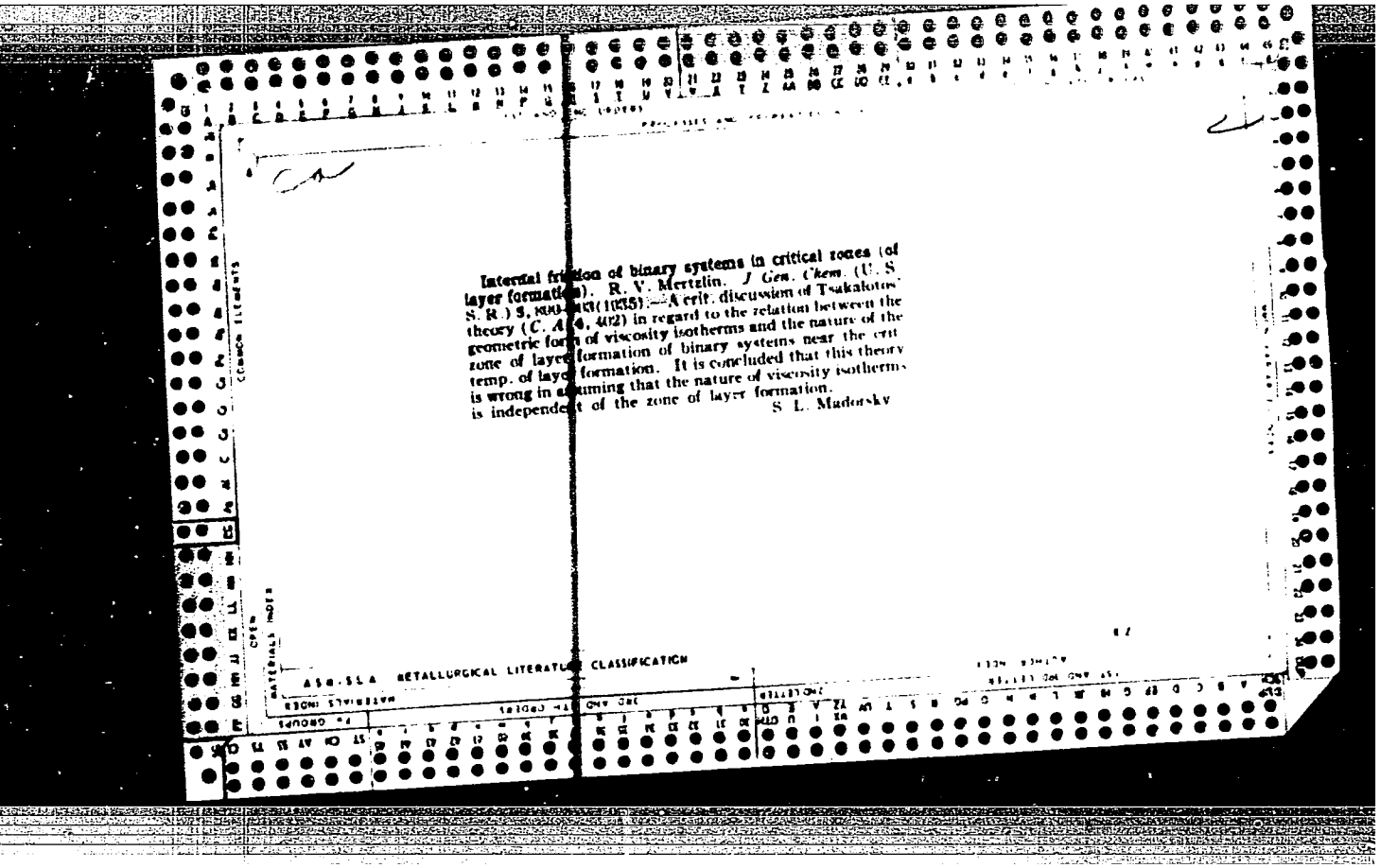
Layer formation in a two-liquid system. R. V. Mertzlin and V. P. Val'-Kachkintsev. *J. Gen. Chem.* (U.S.S.R.) 8, 771 ff. (1938). From a study of the isotherms of the systems Et_3N–H_2O–KCl at 0°, 10° and 15°, C_5H_5N–H_2O–KCl at 0°, 20°, 40° and 80° and $C_4H_{11}N$–H_2O–KCl at 20°, 40°, 60° and 80° it is concluded that the binary systems Et_3N–H_2O, C_5H_5N–H_2O and $C_4H_{11}N$–H_2O should have at low temps. a min. crit. temp. of layer sepn. S. L. M.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Physicochemical properties of some amine water systems capable of separation. R. V. Mertslin J. Gen Chem. (U. S. S. R.) 5, 886-91(1935); cf. Ust-Kach intzev, C. A. 29, 7750[9-1].—The existence of chem.

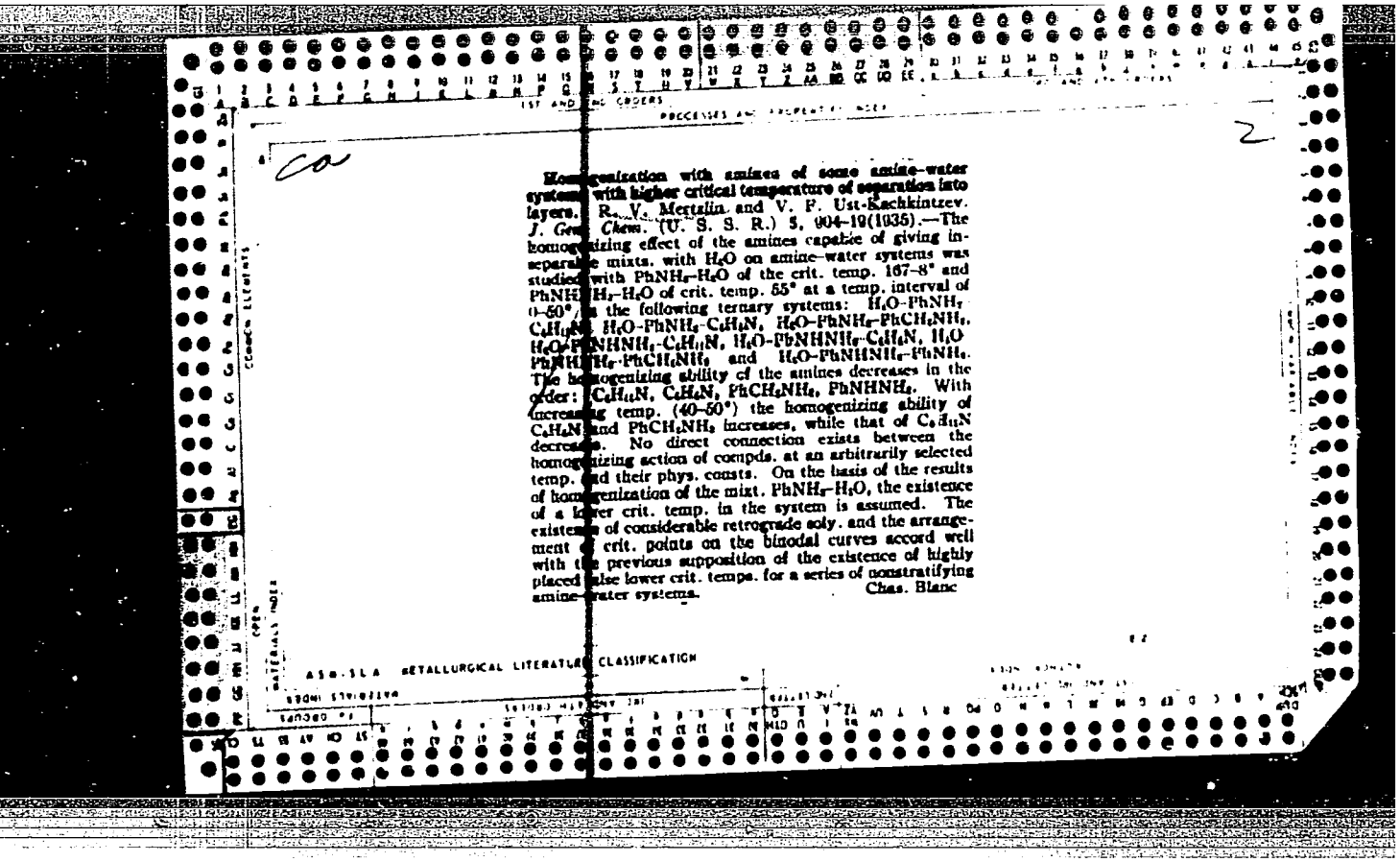
compds. and their thermal decompn. in the systems of β-collidine-water and Et_3N-water was disclosed by the method of surface tension. The polytherms of surface tension of some amino-water systems capable of sepn show properties analogous to those of tautomeric compds This may be explained by the rapid thermal decompn of the compd. and the conversion of the pseudoternary system into the binary. The 2 systems are typically anomalous, because the isotherms show a sharply disclosed active branch and 2 faintly developed maxima shifted with increase of temp. toward the amine. C. B.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



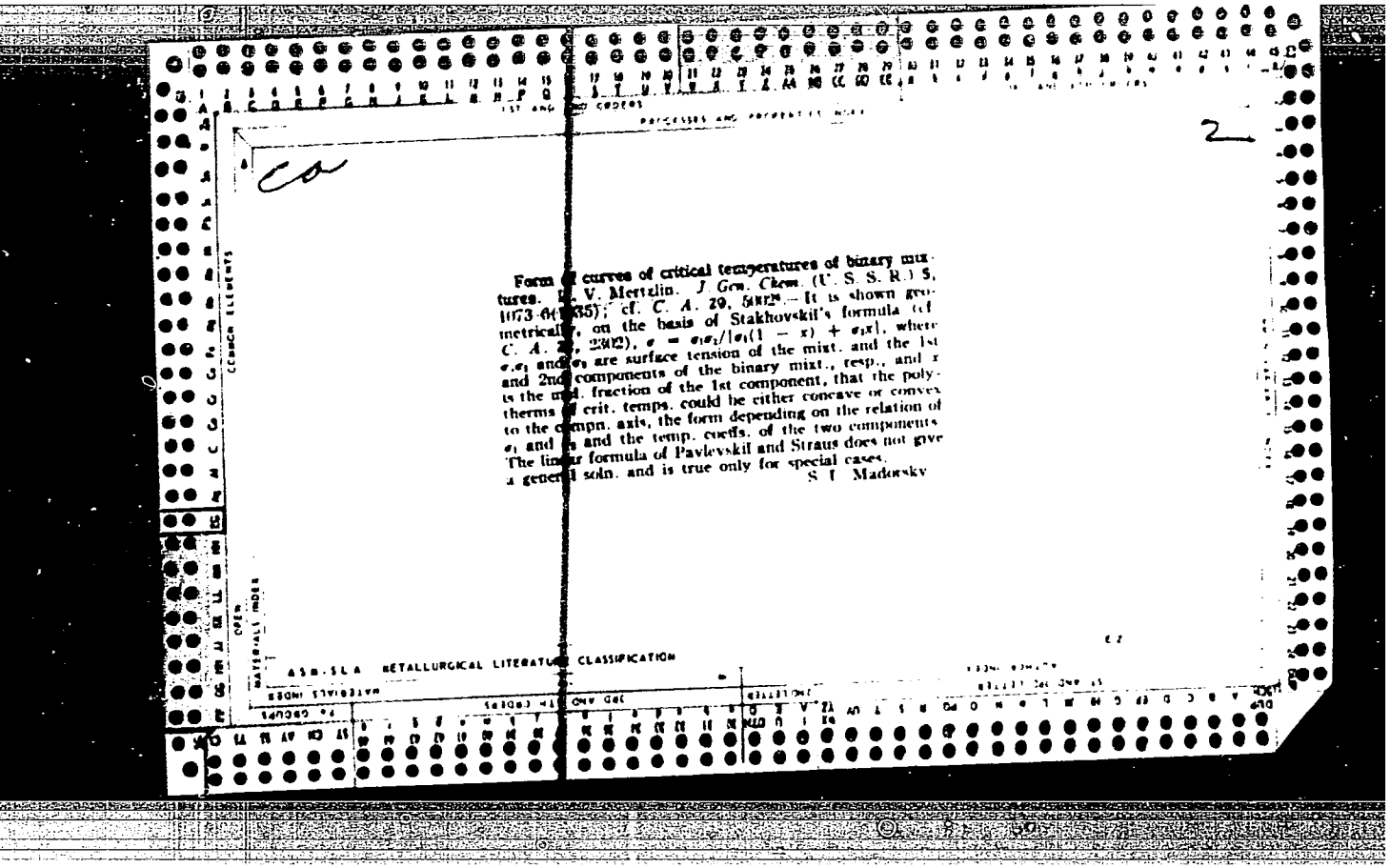
Internal fri[illegible]ion of binary systems in critical zones (of layer formati[illegible]). R. V. Mertzlin. *J Gen. Chem.* (U. S. S. R.) 5, 1[illegible]53(1935).—A crit. discussion of Tsakalotos' theory (*C. A.* [illegible]6, 4472) in regard to the relation between the geometric form of viscosity isotherms and the nature of the zone of layer formation of binary systems near the crit temp. of layer formation. It is concluded that this theory is wrong in assuming that the nature of viscosity isotherms is independent of the zone of layer formation.

S. L. Madorsky



Homogenization with amines of some amine–water systems with higher critical temperature of separation into layers. R. V. Mertslin and V. F. Ust-Kachkintzev. *J. Gen. Chem.* (U. S. S. R.) 5, 904–19(1935).—The homogenizing effect of the amines capable of giving inseparable mixts. with H_2O on amine–water systems was studied with $PhNH_2$–H_2O of the crit. temp. 167–8° and $PhNHNH_2$–H_2O of crit. temp. 55° at a temp. interval of 0–60°, in the following ternary systems: H_2O–$PhNH_2$–$C_6H_{11}N$, H_2O–$PhNH_2$–C_5H_5N, H_2O–$PhNH_2$–$PhCH_2NH_2$, H_2O–$PhNHNH_2$–$C_6H_{11}N$, H_2O–$PhNHNH_2$–C_5H_5N, H_2O–$PhNHNH_2$–$PhCH_2NH_2$ and H_2O–$PhNHNH_2$–$PhNH_2$. The homogenizing ability of the amines decreases in the order: $C_6H_{11}N$, C_5H_5N, $PhCH_2NH_2$, $PhNHNH_2$. With increasing temp. (40–50°) the homogenizing ability of C_5H_5N and $PhCH_2NH_2$ increases, while that of $C_6H_{11}N$ decreases. No direct connection exists between the homogenizing action of compds. at an arbitrarily selected temp. and their phys. consts. On the basis of the results of homogenization of the mixt. $PhNH_2$–H_2O, the existence of a lower crit. temp. in the system is assumed. The existence of considerable retrograde soly. and the arrangement of crit. points on the binodal curves accord well with the previous supposition of the existence of highly placed false lower crit. temps. for a series of nonstratifying amine–water systems.

Chas. Blanc



Form of curves of critical temperatures of binary mixtures. P. V. Mertzlin. *J. Gen. Chem.* (U. S. S. R.) 5, 1073-6(1935); cf. *C. A.* 29, 5812⁸.—It is shown geometrically, on the basis of Stakhovskil's formula (cf. *C. A.* 29, 2802), $\sigma = \sigma_1\sigma_2/[\sigma_1(1 - x) + \sigma_2 x]$, where σ, σ_1 and σ_2 are surface tension of the mixt. and the 1st and 2nd components of the binary mixt., resp., and x is the mol. fraction of the 1st component, that the polytherms of crit. temps. could be either concave or convex to the compn. axis, the form depending on the relation of σ_1 and σ_2 and the temp. coeffs. of the two components. The linear formula of Pavlevskil and Straus does not give a general soln. and is true only for special cases.

S. I. Madorsky

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

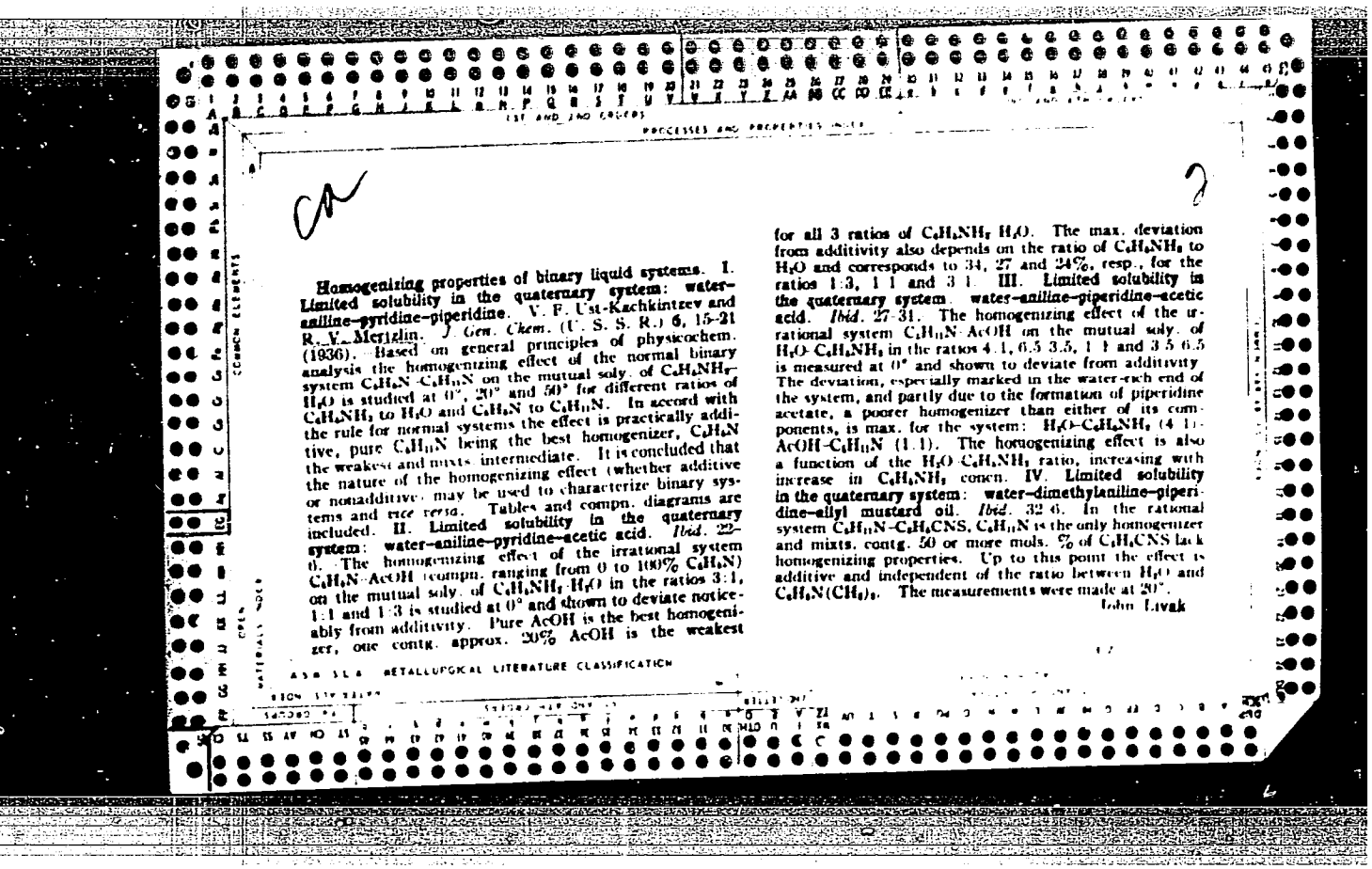
PROCESSES AND PROPERTIES INDEX

CA

Z

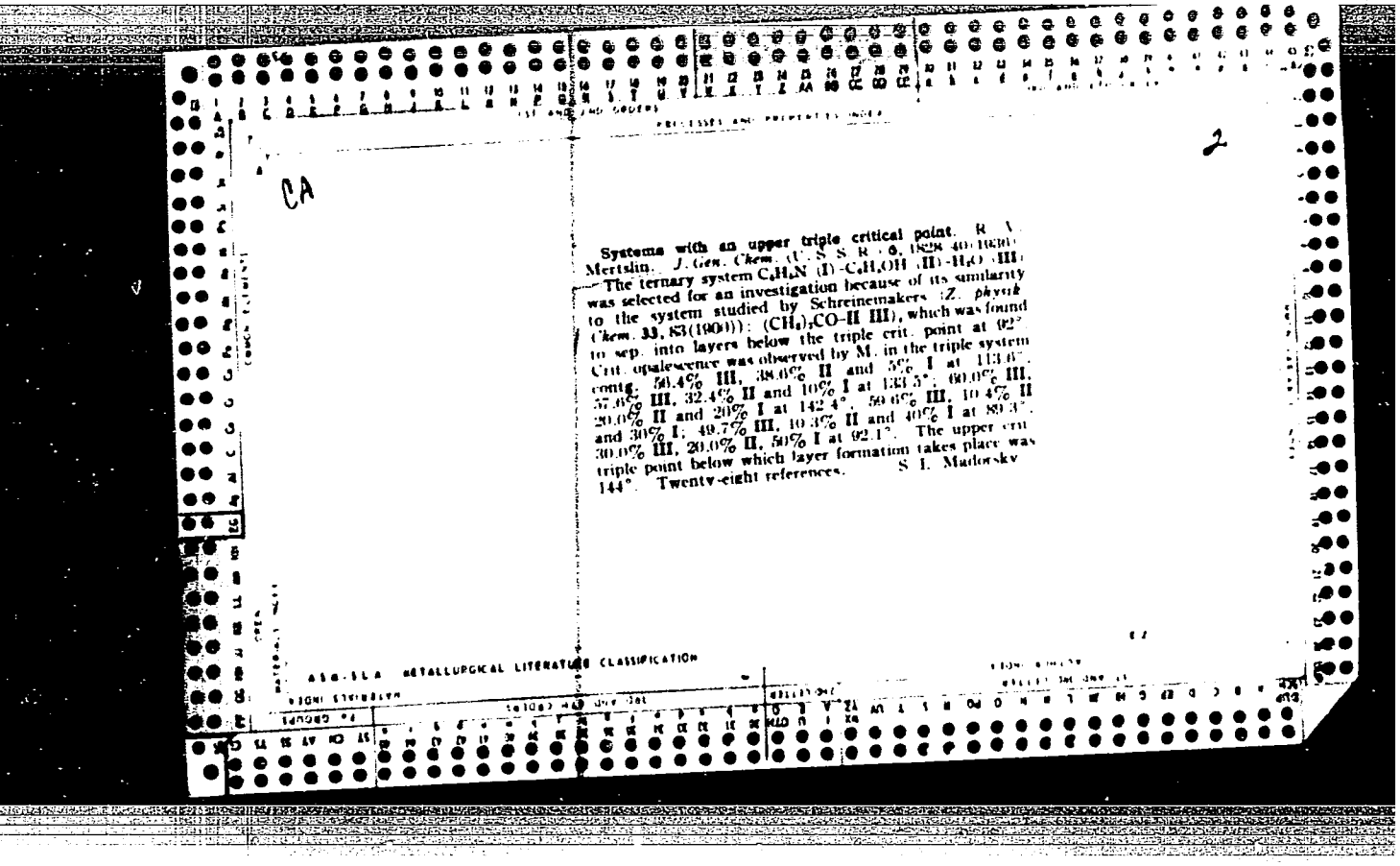
Application of surface tension in physicochemical analysis. R. V. Mertzlin. *Ann. inst. anal. phys.-chim.* (U. S. S. R.) 7, 265-83(1935).—On the basis of a general diagram ($\sigma - t$) for solns., the character of thermal change of geometric form of the isotherms of surface tension of an ideal binary system is shown. This diagram can be applied to the binary systems formed by components that give one undissocd. compd. A continuous series of singular diagrams of surface tension was developed. A relation between the thermal changes and the deviation of surface tension from the additive value for a compd. formed in the system, as well as in some cases for all solns., is discussed. Of interest is the construction of diagrams in the system of coördinates of surface tension-temp.-concn. ($\sigma - c - t$). Chas. Blanc

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Homogenizing properties of binary liquid systems. I. Limited solubility in the quaternary system: water–aniline–pyridine–piperidine. V. F. Ust-Kachkintzev and R. V. Merzlin. *J. Gen. Chem.* (U. S. S. R.) **6**, 15–21 (1936). Based on general principles of physicochem. analysis the homogenizing effect of the normal binary system C_6H_5N–$C_5H_{11}N$ on the mutual soly. of $C_6H_5NH_2$–H_2O is studied at 0°, 20° and 50° for different ratios of $C_6H_5NH_2$ to H_2O and C_6H_5N to $C_5H_{11}N$. In accord with the rule for normal systems the effect is practically additive, pure $C_5H_{11}N$ being the best homogenizer, C_6H_5N the weakest and mixts. intermediate. It is concluded that the nature of the homogenizing effect (whether additive or nonadditive) may be used to characterize binary systems and *vice versa*. Tables and compn. diagrams are included. II. **Limited solubility in the quaternary system: water–aniline–pyridine–acetic acid.** *Ibid.* 22–6. The homogenizing effect of the irrational system C_6H_5N–AcOH (compn. ranging from 0 to 100% C_6H_5N) on the mutual soly. of $C_6H_5NH_2$–H_2O in the ratios 3:1, 1:1 and 1:3 is studied at 0° and shown to deviate noticeably from additivity. Pure AcOH is the best homogenizer, one contg. approx. 20% AcOH is the weakest for all 3 ratios of $C_6H_5NH_2$–H_2O. The max. deviation from additivity also depends on the ratio of $C_6H_5NH_2$ to H_2O and corresponds to 34, 27 and 24%, resp., for the ratios 1:3, 1:1 and 3:1. III. **Limited solubility in the quaternary system: water–aniline–piperidine–acetic acid.** *Ibid.* 27–31. The homogenizing effect of the irrational system $C_5H_{11}N$–AcOH on the mutual soly. of H_2O–$C_6H_5NH_2$ in the ratios 4:1, 6.5:3.5, 1:1 and 3.5:6.5 is measured at 0° and shown to deviate from additivity. The deviation, especially marked in the water-rich end of the system, and partly due to the formation of piperidine acetate, a poorer homogenizer than either of its components, is max. for the system: H_2O–$C_6H_5NH_2$ (4:1)–AcOH–$C_5H_{11}N$ (1:1). The homogenizing effect is also a function of the H_2O–$C_6H_5NH_2$ ratio, increasing with increase in $C_6H_5NH_2$ concn. IV. **Limited solubility in the quaternary system: water–dimethylaniline–piperidine–allyl mustard oil.** *Ibid.* 32–6. In the rational system $C_5H_{11}N$–C_3H_5CNS, $C_5H_{11}N$ is the only homogenizer and mixts. contg. 50 or more mols. % of C_3H_5CNS lack homogenizing properties. Up to this point the effect is additive and independent of the ratio between H_2O and $C_6H_5N(CH_3)_2$. The measurements were made at 20°.

John Livak



CA

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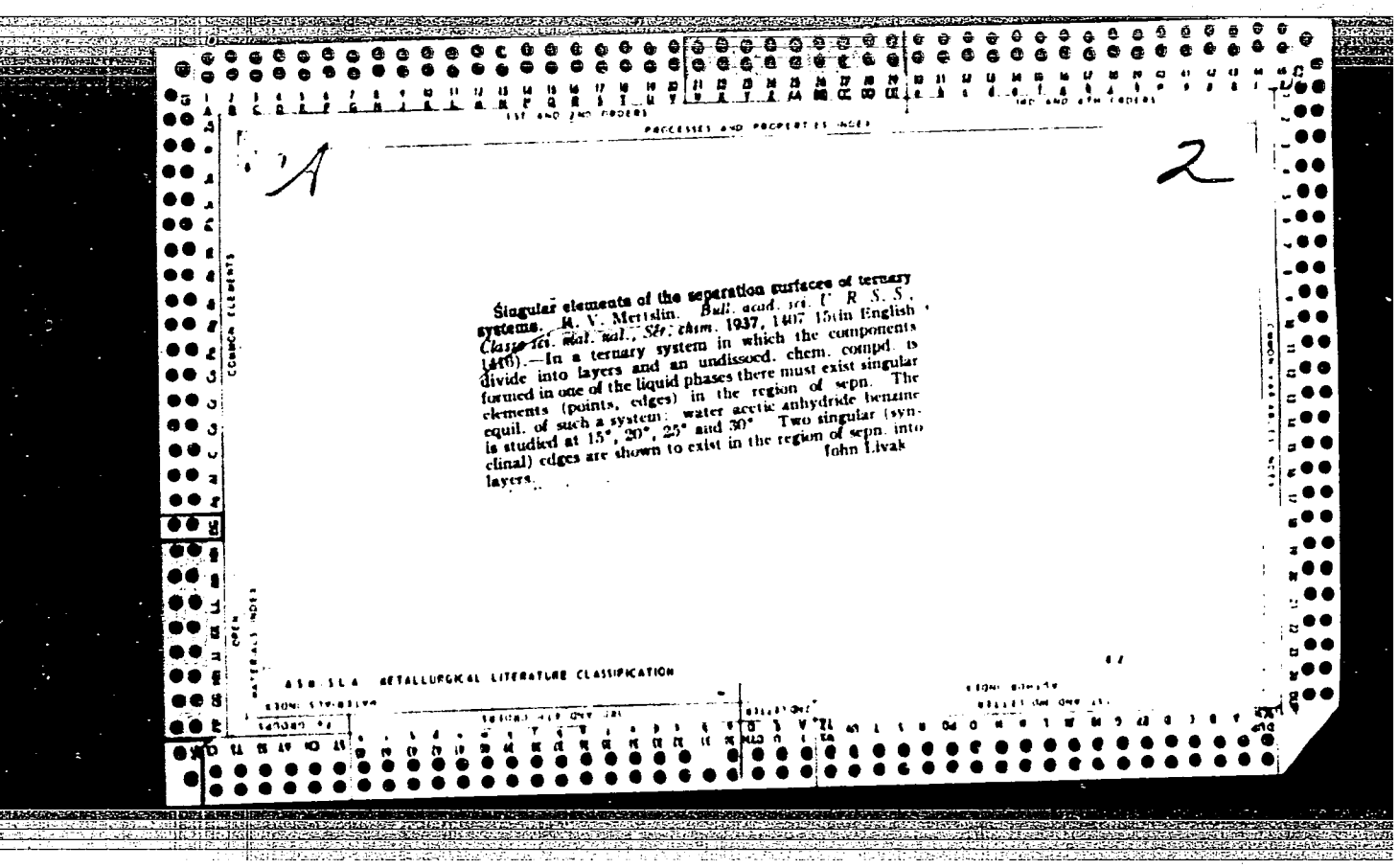
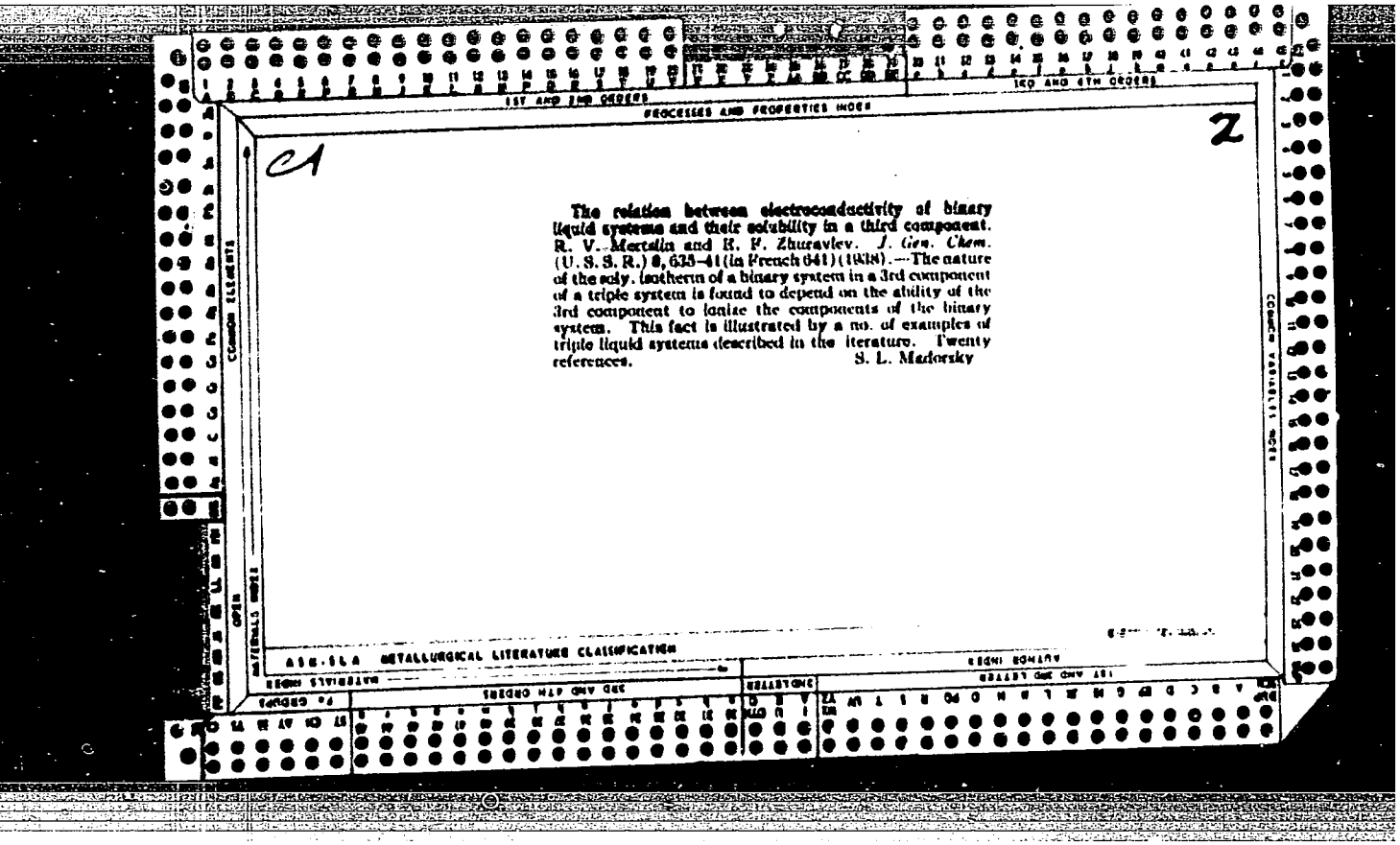
Systems with an upper triple critical point. R. V. Mertslin. *J. Gen. Chem.* (U. S. S. R.) 6, 1828-40(1936). The ternary system C_5H_5N (I)-C_4H_9OH (II)-H_2O (III) was selected for an investigation because of its similarity to the system studied by Schreinemakers (*Z. physik. Chem.* 33, 83(1900)): $(CH_3)_2CO$–II III), which was found to sep. into layers below the triple crit. point at 92°. Crit. opalescence was observed by M. in the triple system contg. 50.4% III, 38.6% II and 5% I at 113.6°; 57.6% III, 32.4% II and 10% I at 133.5°; 60.0% III, 20.0% II and 20% I at 142.4°; 50.6% III, 10.4% II and 30% I; 49.7% III, 10.3% II and 40% I at 89.3°; 30.0% III, 20.0% II, 50% I at 92.1°. The upper crit. triple point below which layer formation takes place was 144°. Twenty-eight references. S. I. Madorsky

A10-51A METALLURGICAL LITERATURE CLASSIFICATION



Singular elements of the separation surfaces of ternary systems. M. V. Meritslin. *Bull. acad. sci. U. R. S. S., Classe sci. mat. nat., Sér. chim.* 1937, 1407-15(in English 1416).—In a ternary system in which the components divide into layers and an undissocd. chem. compd. is formed in one of the liquid phases there must exist singular elements (points, edges) in the region of sepn. The equil. of such a system: water acetic anhydride benzine is studied at 15°, 20°, 25° and 30°. Two singular (synclinal) edges are shown to exist in the region of sepn. into layers. John Livak



C1

2

The relation between electroconductivity of binary liquid systems and their solubility in a third component. R. V. Mertslin and R. F. Zhuravlev. *J. Gen. Chem.* (U. S. S. R.) 8, 635–41 (In French 641) (1938).—The nature of the soly. isotherm of a binary system in a 3rd component of a triple system is found to depend on the ability of the 3rd component to ionize the components of the binary system. This fact is illustrated by a no. of examples of triple liquid systems described in the literature. Twenty references.

S. L. Madorsky