





BALAN, A.

"Competent Planning as a Means to Fuller Utilization of All Possibilities for  
the Development of Cotton Growing," Khlopkovodstvo, No.1, 1952

1. BALAN, A.
2. USSR (600)
4. Cotton Manufacture
7. Main problems in planning the utilization of productive means of cotton mills.  
Khlopkovodstvo no. 7, 1952

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

BALAN, A.

Construction of sheds for the manufacture hall of a furniture factory with the use of sliding framings; the execution. p. 326.

REVISTA CONSTRUCTIILOR SI A MATERIALELOR DE CONSTRUCTII. (Asociatia Stiintifica a Inginerilor si Tehnicienilor din Romania si Ministerul Constructiilor si al Materialelor de Constructii) Bucuresti, Romania. Vol. 11, no. 7, July 1959.

Monthly list of East European Accessions (EEAI) LC Vol. 9, no. 2, Feb. 1960

Uncl.

RUSESCU, A., Prof.; BALAN, A.

Splenectomy in idiopathic thrombopenic purpura. *Rumanian M. Rev.*  
4 no.1:52-55 Ja-Mr '60.

1. Clinic of Paediatrics of the Medicopharmaceutical Institute,  
Bucharest.

(PURPURA, THROMBOPENIC surg.)  
(SPLEEN surg.)

RUSESCU, A., prof.; BALAN, Angela, dr.; BALABAN, I., dr.

Considerations on 7 cases of Cooley's anemia. Med. intern. 13 no.10:  
1409-1419 0 '61.

1. Lucrare efectuata in clinica de pediatrie "Emilia Irza", Bucuresti.

(ANEMIA, ERYTHROBLASTIC case reports)

BALAN, Alex., ing., correspondent

Increased enthusiasm. Constr Buc 14 no.672:2 24 N '62.



BALAN, Alexandru, ing.

For the next plan of measures. Constr Buc 14 no. 674: 3  
8 December 1962.

1. Seful serviciului tehnic din Directia de sistematizare, arhitectura si proiectare a constructiilor, Maramures.

BALAN, A., ing., correspondent

Obligations according to the plan level. Constr. Buc  
14 no.676s1 22 D'62.

BALAN, Alexandru

Projects for 1965. Constr Buc 16 no.775:1 14 N '64.

1. Head of Resistance-Roads Workshop, Office of Systematization,  
Architecture and Construction Projects, Maramures.

BALAN, A., ing., correspondent

Increased productivity. Constr Buc 16 no.776:1 21 N '64.

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... ..

... .. of the ... .. in ... ..  
... .. no. 7011 ... ..

BALAN, Alexandru, ing., correspondent; CEAUS, Mircea, correspondent

Technical and organizational measures for achievement of  
the 1965 tasks. Constr Bus 17 no.783:1 9 Ja '65.

BALAN, Ana, Ing.

Art of concreting. Constr Bie 17 no.787:3 6 F '65.

1. Institute of Building Research and Construction Economics.

BAIAN, A.G., Cand Agr Sci -- (diss) "Annual crops and their  
place in meadow <sup>crop rotation</sup> ~~hay turnover~~ on the lowland meadows of <sup>Poleye</sup> ~~the~~ UKSSR."  
Kiev, 1959. 21 pp incl cover (~~Vsesoyuzn. All-Union Scientific Res~~  
~~search~~ Inst of Fodder in V.R. Vil'yana). 150 copies  
(KL, 39-59, 106)

62



BALAN, A.G., kand. sel'skokhoz. nauk

Cultivated hayfields in Polesye. Zemledelie 27 no.2:49-51 F '65.  
(MIRA 18:4)

1. Ukrainskiy institut inzhenerov vodnogo khozyaystva.

BALAN, B.G.

Diurnal displacement and the ephemeris of Perseids' radiant.

Biul. Inst. astrofiz. AN Tadzh. SSR no.33:27-37 '62.

(MIRA 17:11)

BALAN, B.O.

Investigating the trail of the meteor of July 30, 1957. Biul.  
Inst.astrofis.AN Tadsh.SSR no.26:21-24 '59.

(MIRA 13:5)

(Meteors--July)

COUNTRY: Rumania  
 CATEGORY: CULTIVATED PLANTS, Fodder Grasses and Roots.  
 ABS. JOUR.: REF ZHUR - BIOLOGIYA, NO. 4, 1959, No. 15683  
 AUTHOR: Apostol, Th.; Balan, O.; Balasoiu, A.;  
 INST.: Berenghi, I.; Buda, L.; Popa, Th.  
 TITLE: Methods of Growing Perennial Grasses for  
 Seeds.

ORIG. IUB.: An. Inst. cercetari agron., 1957, 24, No. 5,  
 179-194

ABSTRACT

In the agricultural research institute of Rumania during 1950 to 1954 at six experimental stations, the highest seed crops of dew grass (DG), meadow fescue (MF), timothy grass (TG), pasture ryegrass (PR) and tall oatgrass (TO) were obtained in broad-row sowing (45 to 60 cm between rows) with seeding quota of 15 to 20 kg/h for DG, MF and PR, 7 to 8 kg/h for TG and 7.5 to 9.5 kg/h for TO. In a number of regions

CARD: 1/2

... Branishnikov

MEZINCESCU, M.D.; POPESCU-STEFANESCU, A.; BALAN, C.

Method for studying the contingent variations of the need of nitrogen. *Studia Univ B-B S Chem* 8 no.1:506 '63

1. Institute of Medicine and Pharmacy, Bucharest.

BALAN, C.; POPA, O.

Contribution to the study of the production of perennial plants sowed in pure cultures. p. 491.

COMUNICARILE. Bucuresti. Vol. 9, no. 5, May 1959.

Monthly List of East European Accessions (EEAI) LC, Vol. 9, no. 1, January 1960.

Uncl.

POPESCU-STEFANESCU, A.; BALAN, C.; MEZINCESCU, M.D.

Comparative research on some methods for liver xanthinoxidasic activity determination. Studii cerc biochimie 6 no.4:529-537 '63.

1. Catedra de chimie biologica I, Institutul medico-farmacentic, Bucuresti.

150444

Country : RUMANIA  
Category: Soil Science Mineral Fertilizers  
Abs Jour: RZhnrol., No 14, 1958, No 63074  
Author : Savinova, N.; Balan, D.; Blanaru, V.  
Inst : Rumanian Academy  
Title : Mineral Nutrition of Seedlings in Feeder Pots  
Orig Pub: Geran. Acad RZA, 1957, 7, No 7, 669-674  
Abstract: No abstract

Card : 1/1



BALAN, D.

"Increase of tomato yield by treatment of seeds with stimulants"

p. 3053 (Comunicarile, Vol. 7, No. 12, Dec. 1957, Bucharest, Rumania)

Monthly Index of East European Accessions (EEAI) IC, Vol. 8, No. 1,  
Jan 58.

Country : RUMANIA  
Category : Cultivated Plants. Potatoes. Vegetables. Melons. M

Abs Jour : RZhBiol., No 6, 1959, No 24895

Author : Balan, D.; Serban, N.

Inst : Academy of RPR.

Title : Increasing the Harvest of Tomatoes by Treating  
the Seeds with Growth-Stimulating Agents.

Orig Pub : Comun. Acad. RPR, 1957, 7, No. 12, 1951-1958

Abstract : The treatment of tomato seeds (prior to sowing)  
by 3 percent potassium bromide for 3 hours and  
by a 2 percent solution of hydroxynone assisted  
in increasing the harvest by 9-10 percent, the  
size of the fruits and the ascorbic acid content  
by 13-48 percent. Treatment of the seeds by potas-  
sium permanganate reduced the harvest by 8.8 per-  
cent.

Card : 1/1

CONSTANTINESCU, C.; NICOLAIDE, L.; BALAN, E.

Germanium photodiodes. Automatica electronica 6 no.3:112-117  
Ny-Je '62.

BALAN, E., ing.

Structure of cost price and investments in siderurgy.  
Metalurgia constr mas 15 no.8:516-521 Ag '63 siderurgy.

1. Institutul de proiectari de uzine si instalatii metalurgice.

POPA, N., ing.; COMAN, B., ing.; BALAN, E., ing.

Economic and technical indicators; means of verification of industrial investment efficacy. Probleme econ 16 no.3:156-160  
Mr '63.

1. Director, Institutul de proiectari in constructii si materiale de constructii si de cercetari pentru materiale de constructii (for Popa). 2. Director, Institutul de proiectari al Ministerului Industriei Usoare (for Coman). 3. Institutul de proiectari de usine si instalatii metalurgice (for Balan).

BALAN, F., ing.

Considerations on the scrap iron problem. Metalurgia Rum 17 no.2:  
95-103 F '65.

1. Institute for the Planning and Designing of Metallurgic  
Plants and Installations, Bucharest.

L 15920-66 EWA(h)/EWP(b)/EWP(t) JD  
ACC NR: AP6008375 SOURCE CODE: RU/0017/65/000/002/0095/0103  
AUTHOR: Balan, E. (Engineer) 17  
ORG: Research Institute for Metallurgical Works and Installations (Institutul de proiectari de usine si instalatii metalurgice) 18  
TITLE: Considerations on scrap iron 16  
SOURCE: Metalurgia, no. 2, 1965, 95-103  
TOPIC TAGS: iron, steel  
ABSTRACT: The author discusses the importance of scrap iron in the production of iron and steel, giving some data on the principal sources of scrap iron in Rumania at the present time and in future plans. Orig. art. has: 4 figures, 4 formulas, and 1 table. [JPRS]  
SUB CODE: 11 / SUEM DATE: none

Card 1/1

UDC: 669:183.43

FISEL, S.; FRANCHEVICI, H.; BALAN, Gh.

Quantitative determination of tin by the chromatographic method on the paper and the cellulose column. Studii chim Iasi 11 no.1:7-13 '60.  
(EEAI 10:3)

1. Academia R.P.R., Filiala Iasi, Institutul de chimie "Petru Poni."  
(Chromatography) (Tin) (Cellulose) (Copper)



FISEL, S., FRANCHEVICI, H., BALAN, Gh.

Quantitative determination of tin by paper-chromatographic method and with the aid of cellulose column. Rev chimie 6 no.1:175-180 '61.

BALAN, Gh.; GHIBU, Costin

System of electronic thermostating with thermistors. Studii fiz  
tehn Iasi 14 no.1:235-236 '63.

BALAN, Gh., ing.

Contribution of the enterprise for Electric Power Rationalization and Modernization in raising the technical level of running and maintenance of electric power plants. Energetica Rum 9 no.5: 179-182 My '61.

BALAN, Gh., ing.

Contribution of the Enterprise for Electric Power Rationalization  
and Modernization in the application of new techniques in the  
electric power sector. Energetica Rum 11 no.7:353-359 J1 '63.

**MYNBAYEV, T.T.; BALAN, G.I.**

**Economic and biological characteristics of corn planted  
at an early and late season. Isv. AN Kazakh. SSR. Ser.  
biol. nauk 3 no.6:23-28 H-D '65. (MIRA 18:12)**

RUBTOV, St., ing.; FLORESCU, I.l., ing.; COSTEA, A., ing.; BALAN, I.;  
CARABELA, St.

Contributions to the study of microclimate in the mountainous  
forest nurseries. Meteorologia hidrol gosp 8 no.4:177-180 '64

RUMANIA/Cultivated Plants - Commercial, Oil-Bearing. Sugar-  
Bearing. M

Abs Jour : Ref Zhur Biol., No 18, 1958, 82422

Author : Balan, I.M.

Inst : Agricultural Research Institute

Title : On the Determination of an Optimum Number of Cultivations  
in Cotton Plantings.

Orig Pub : An. Inst. cercetari agron., 1957, 24, No 5, 121-134

Abstract : Results of field tests conducted in 1942-1945 and 1950-  
1954 in Bucharest Province under arid climatic conditions  
for the purpose of determining an optimum number, depth  
and methods of intercropping in cotton plantings. It  
was determined that the optimum number of cultivations  
under the conditions of a severely arid climate is 3-4,

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RUMANIA/Cultivated Plants - Commercial. Oil-Bearing. Sugar-  
Bearing.

M

Abs Jour : Ref Zhur Biol., No 18, 1958, 82422

and under the conditions of a less arid climate - 4-5.  
A large number of cultivations is unprofitable although  
increases in the yield are obtained before the 8th culti-  
vation. To obtain maximum yield, it is sufficient to  
carry out all cultivations to the same average depth of  
8-10 centimeters. The most effective method of cultivat-  
ing is mechanized cultivating of the spaces between rows  
with hand weeding in the rows. However, a complete re-  
placement of mechanized cultivation with hand weeding did  
not lower the yield which gives basis to contemplate the  
feasibility of replacing intercropping by weed treatment  
with specific herbicides. -- D.B. Vakhmistrov

Card 2/2

- 78 -



BALAN, I. Z.

"Novnia Zaria" factory during forty years of the Soviet regime.  
Mosl.-shir. prom. 23 no. 12: 4-6 '57. (MIRA 11:2)  
(Perfumes)

BALAN, I.Z., insh.

Mechanisation of the transportation of perfume containers.  
Masl.-shir.prom. 26 no.2:40-44 F '60. (MIRA 13:5)

1. Moskovskaya parfyumernaya fabrika "Novaya zarya."  
(Perfumes) (Containers--Transportation)

BAIAN, I.Z., inzh.

Automatic smoke-signaling device. Masl.-zhir.prom. 26 no.12:36  
D '60. (MIRA 13:12)

1. Moskovskaya fabrika "Novaya zarya."  
(Smoke prevention)

BALAN, I. Z., inzh.

Achievements of the "Novaia Zaria" factory from the 21st to the  
22d Congress of the CPSU. Masl.-zhir. prom. 27 no.10:14-16  
0 '61. (MIRA 14:11)

(Moscow--Perfumes)

SECRET, ...

1975, 6, 22, 1975. Under the title of solutions of ...  
Chapko v. ...

for: Western European Accasions List, Vol. 1, ...

BALAN, J.

"Induction and dielectric high-frequency heating." p. 89.

TECHNICKA PRACA. (Rada vedeckych technickych spolocnosti pri Slovenskej akademii vied). Bratislava, Czechoslovakia, Vol. 7, No. 2, 1955.

Monthly list of East European Accessions (EEAI), LC, Vol. 6, No. 6,  
August 1959.  
Uncla.

Palan, J. , Betina, V.

A new method of the quantitative determination of antibiotics. p. 513.

BIOLOGIA, Bratislava, Czechoslovakia, Vol. 11, no. 7, 1959.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, no. 10, Oct, 1959  
Unol.

BALAN, J.; DROBNICA, L.

Cancerostatic action of beta-naphtylisothiocyanate on skin carcinoma of mice (preliminary report). Neoplasma 8 no.2:127-129 '61.

1. Department of Technical Microbiology, Biological Institute of the Slovak Academy of Sciences; Faculty of Chemistry; Slovak Polytechnical University, Bratislava, Czechoslovakia.

(THIOCYANATES pharmacol) (NAPHTHALENES pharmacol)  
(SKIN NEOPLASMS exper)



NEMEC, Pavel; BALAN, Josef; EBRINGER, Libor; SATURA, Desider

The use of fermented grain extract as a source of vitamin B<sub>1</sub> for  
biological enrichment of bread. Biologia 16 no.2:97-102 '61.  
(REAI 10:8)

1. Biologicky ustav Slovenskej akademie vied Oddelenie technickej  
mikrobiologie, Bratislava, a Katedra fyziologie rastlin, Oddelenie  
mikrobiologie Prirodovedeckej fakulty University Komenskeho,  
Bratislava.

(BREAD) (VITAMIN B<sub>1</sub>) (GRAIN)

BETINA, Vladimir, inz., C.Sc., promovany biolog.; MEMEC Pavel,; BALAN, Jozef, inz.; KOVAC, Stefan, dr., inz., C.Sc.

Identification of the antibiotic S-82. Chem zvesti 15 no.11/12: 843-847 W-D '61.

1. Katedra technickej mikrobiologie a biochemie a Katedra organickej chemie Slovenskej vysokej skoly technickej, Bratislava a Ceskoslovenska akademie ved, Oddelenie technickej mikrobiologie Biologickeho ustavu Slovenskej akademie vied, Bratislava. 2. ~~Clan~~ korespondent-Slovenskej akademie vied (for MemeC). Authors' address: Bratislava, Kollarovo namesti 2, chemicky pavilon, Slovenska vysoka skola technicka,

BALAN, J.; NEMEC, P.; BETINA, V.

Chromatographic study of antibiotics from soil fungi. Folia microbiol.  
7 no.4:243-246 '62.

1. Department of Technical Microbiology, Institute of Biology,  
Slovak Academy of Sciences, and Department of Technical Microbiology  
and Biochemistry, Faculty of Chemistry, Slovak Polytechnical University,  
Bratislava.

(SOIL - microbiology) (ANTIBIOTICS - chemistry)  
(FUNGI - chemistry) (CHROMATOGRAPHY)

BETINA, Vladimir, inz., promovany biolog, CSc.; NEMEC, Pavel, prof. dr., promovany farmaceut; KUTKOVA, Marta, promovany biolog; BALAN, Jozef, inz., CSc.; KOVAC, Stefan, doc., dr., inz. CSc.

Citrinin isolation from *Penicillium notatum* Westling. Chem zvesti 18 no.2:128-139 '64.

1. Department of Technical Microbiology and Biochemistry, Slovak Higher School of Technology, Bratislava, Kollarovo namesti 2 (for Betina, Nemeo, Kutkova).
2. Biological Institute, Slovak Academy of Sciences, Department of Technical Microbiology, Bratislava, Dubravska cesta (for Balan).
3. Department of Organic Chemistry, Slovak Higher School of Technology, Bratislava, Kollarovo namesti 2 (for Kovac).
4. Corresponding member of the Slovak Academy of Sciences (for Nemeo).

BALAN, Konstantin Petrovich, svinar; LELYAKOVA, I., red.; BILOUS, I.,  
tekh. red.

[Fattening 2000 swine in a year] 2000 svinei vidhodovuiu za rik.  
Odessa, Odes'ke knizhkovye vyd-vo, 1960. 24 p. (MIRA 14:11)

1. Sovkhoz "Andreyevskiy" Odesskoy oblasti (for Balan).  
(Swine--Feeding and feeds)

BALAN, L.M.

Bird collection at the Museum of Nature of the Academy of Sciences  
of the Uzbek S.S.R. *Uzb. biol. zhur.* no. 6:48-52 '60.

(MIRA 14:2)

1. *Muzey prirody AN UzSSR.*

(TASHKENT--BIRDS--CATALOGS and COLLECTIONS)

~~BALAN, L.N.~~

Nikolai Alekseevich Zarudnyi; on the 40th anniversary of his  
death. Usb. biol. zhur. no.2:75-77 '59. (MIRA 12:7)  
(Zarudnyi, Nikolai Alekseevich, 1859-1919)

BALAN, M.

Ships with underwater wings. p. 464.

REVISTA TRANSPORTURILOR. (Asociatia Stiintifica a Inginerilor si Tehnicienilor din Romina si Ministerul Transporturilor Rutiere, Navale si Aeriene)  
Bucuresti, Rumania. Vol. 6, no. 11, Nov. 1959.

Monthly list of East European Accessions (EEAI) LC Vol. 9, no. 2, Feb. 1960

Uncl.



BALAN, Mihai, ing.; ZARA, Aurel, tehnician

Use of D-35 engines as auxiliary motors on river tugboats. Rev  
transport 10 no.3:119-121 Mr '63.

EXCERPTA MEDICA Sec.9 Vol.12/4 Surgery April 1958

2401. CLINICAL CONTRIBUTIONS TO THE STUDY OF CRYPTORCHIDISM -  
Contribuții clinice la studiul criptorhismului - Dascălu-Așgian R.,  
Vitalyos A., Bălan M., Diaconescu OI. and Rosan L.M.  
Clin. Endocrinol., Cluj - ENDOCRINOLOGIA (București) 1957, 2/1 (47-52)  
Based on the study of 32 cases cryptorchidism is considered to be a symptom within the  
general pattern of various growth dystrophies. Clinical polymorphism and the  
type of metabolic troubles displayed both by the patients and their ancestors are  
the expression of an unbalanced diencephalo-hypophyseal complex. Endemic  
thyreopathic dystrophy may have played a rôle in the genesis of this dysfunction,  
as E. T. D. is met with in a proportion of 51% among the patients and can be  
found to exist in the ancestors as well. Therapeutic lines are critically discussed  
and the need for early hormonal treatment which is compulsorily to precede  
surgical intervention, is emphasized.

BALAN, M.

"Concerning Microcephalic Skulls."

p. 243 (Izvestia, Vol. 2, 1957, Sofia, Bulgaria)

Monthly Index of East European Accession (EEAI) IC, Vol. 7, No. 11,  
Nov. 1958

RUMINIA/ Human and Animal Physiology. Blood Circulation. T  
General Problems.

Abstr Jour: Ref Zhur-Biol., No 20, 1958, 93184.

Author : Carare, H., Palau, M.

Inst : AS Ruzanina P.R.

Title : Parabolic Manifestations in Regulation of Blood  
Pressure and Respiration with Stimulation of Chemore-  
ceptors of Muscles. Mechanism of Their Origin.

Orig Pub: Studii si cercetari stiint. Acad. RPR Fil. Iasi. Med.,  
1956, 7, No 1, 59-75.

Abstract: With repeated stimulation of chemoreceptors of per-  
fused muscles of dog extremities with a 10% KCl solu-  
tion there was initially observed an increase in ar-  
terial pressure and amplitude of the respiratory move-  
ment, and later on a change was noted in the normal

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RUSSIAN/Man and Animal Physiology. Blood Circulation.  
General Problems.

T

Abs Jour: Ref Zhur-Diol., No 20, 1958, 93184.

relationships between the intensity of the reaction and the injected dose (balanced and paradoxical phases), inversion of the reaction, and complete cessation (inhibition phase). In several cases further stimulation led to reestablishment of excitability. With a variation in the functional state of the centers (deepening of chloralose anesthesia), the character of the reactions changed. The authors assume that paralytic changes in the regulatory centers of circulation and respiration were connected with the change in rhythm of the activity of the chemoreceptors which were subjected to stimulation. -- From the author's abstract.

Card : 2/2

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BALAN, M.; POSNIKOVA, N.

Three skeletons of the late Roman time found in the Plevan region. Izv Inst morf BAN no.6:89-101 '62.

CARARE, N.; BALAN, M.; STEFAN, I.; CIUREA, Elena

The action of the cerebellum and cerebral cortex on pressure-regulating and respiratory interoceptive responses; functional relationships. Rumanian M Rev. no.1:103-104 Ja-Mr '61.

1. Laboratory of Physiology, Director: Acad. Prof. V. Rascanu. Institute of Medicine, Jassy.

(CEREBELLUM physiology)  
(RESPIRATION physiology)

(CEREBRAL CORTEX physiology)  
(BLOOD PRESSURE physiology)

STANCU, H.; BALAN, M.; PETRESCU, G.; DRAGOMIRESCU, Maria

Data on the utilization of glucose in hyperthyroidism. Stud. cercet.  
endoor. 13 no.2:283-290 '62.

(HYPERTHYROIDISM metabolism) (GLUCOSE metabolism)  
(OXYGEN metabolism)



BALAN, Maria, dr.; IONESCU, Nicon, dr.; TEODORESCU-FRUMOSU, Sanda, dr.

Considerations on a case of basophilic leukemia. Med. inter., Bucur  
13 no.3:459-463 Mr '61.

1. Lucrare efectuata in Spitalul din Turmu Magurele.  
(LEUKEMIA case reports) (BASOPHILS)

ROMANIA

CERNEA, P., MD; BALAN, H., MD.

Clinical Hospital M.T.Tc., Iasi (Spitalul Clinic M.T.Tc., Iasi)  
- (for all)

Bucharest, Viata Medicala, No 23, 1 Dec 63, pp 1617-1621

"Electrocardiographic Aspects in Venous Thrombosis of the  
Retina." (Paper presented to the Union of Societies of  
Medical Sciences, Iasi Affiliate, 1962.)

NEGOESCU, I.; BALAN, M.; STANCU, H.; NICOLESCU-CATARGI, A.I.; PETRESCU, C.

The value of metabolic, hormonal and functional tests  
in incipient hyperthyroidism. Stud. cercet. endocr.  
14 no. 3:313-325 '63.

(THYROID FUNCTION TESTS) (HYPERTHYROIDISM) (ELECTROENCEPHALOGRAPHY)  
(THYROID HORMONES)

NEGOESCU, I.; BALAN, M.; STANCU, H.

Endemic cretinism, ~~embryo~~embryofetal form of endemic thyreopathic dys-  
trophy. Stud. cercet. endocr. 14 no.4/5/6:609-617 '63.

BALAN, Mihai, ing.

Development of the Danube tugboats. Rev transport 10  
no.1:33-35 Ja '63.

BALAN, Mihai, ing.

Construction of small boats. Rev transport ll no.7:317-322  
Jl '64.

MILCU, St.M.; NEBOESCU, I.; BALAN, M.; STANCU, H.

A new clinical form of hyperthyroidism: exophthalmic hyperthyroidized goiter. Stud. cercet. endocr. 15 no.6:533-539 '64.

NEGOESCU, I.; BALAN, M.; STANCU, H.; VOIGULET, N.; PETRESCU, C.

Data on the feedback mechanism in hyperthyroidism and Basedow's disease. Stud. cercet. endocr. 15 no.6:547-553 '64.



VOLOSIEVICI-MIRZA, Lucia; BALAN, Marioara; DIMITRIU, Carmen; CHEORGHU,  
Tony; BARBARASA, Cecilia.

Types of nervous system in rats. Stud. cercet. neurol. 10 no.1:  
23-35 F'65.

BALAN, M., ing.

Apparent reinforced concrete. Constr Buc 17 no.798:4 24 Ap '65.

1. General Directorate of Constructions and Assembling for Chemical Plants and Oil Distilleries, Ministry of the Petroleum, and Chemical Industry.

NEGOESCU, I.; STANCU, H.; PETRESCU, C.; BALAN, M.

Contribution to the study of the role of the pituitary gland  
in heat production. Studii cercet. endocr. 16 no.2:99-111 '65.

NASTASE, G.; MUNTEANU, M.; CARNIOL, M.; DOBRESCU, A. I.; ILIES, M.; BALAN, N.

Enteropathic acrodermatitis. Reflexions on its aetiopatho-  
genesis and therapy. Rumanian med. rev. 7 no.3:47-54 Ja-Mr'64

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BALAN, N.

What are bacterial fertilizers?

P. 31 (DRUMUL BELUGULUI) (Bucuresti, Rumania) No. 3, Mar. 1957

50: Monthly Index of East European Accessions (MEAT) IC Vol. 7, No. 5, 1958

BALAN, N., ing. eksp.

Technical conference. Constr. 17 no. 793:2 2b) 165.

BALAN, P., ing.

Mechanisation and technological improvement of the manufacture  
of household goods. Industria usoara 3 no.10:432-434 0  
'56.

BALAN, P.

"Polishing metallic surfaces."

p. 73 (Industria Usoara) Vol. 4, no. 2, Feb. 1957  
Bucharest, Rumania

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4,  
April 1958



BALAN, P.

"Basic principles for the production of forging and calibrating matrices in the fabrication of vast-consumption metallic goods."

p. 131 (Industria Usocara) Vol. 4, no. 3, Mar. 1957  
Bucharest, Rumania

SO: Monthly Index of East European Accessions (EEAI) IC. Vol. 7, no. 4,  
April 1958

BIJAN, P.

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AUTHORS: Bălan, St., Răutu, S., Arcan, M., Petou, V.

TITLE: Study of the Behavior of Constructions by Experimenting With Mockups From Plastic Materials<sup>p</sup>

PERIODICAL: Studii si Cercetări de Mecanică Aplicată, 1959, Nr 1, pp 151 - 172 (RUM)

ABSTRACT: A new method of experimentation with reduced scale mockups has been developed for the studies and calculations of new construction types. The mockups can be made from the same material as the prototype or from some other material. The authors first pose the problem of similarity, indicate with "m" the elements of the mockup and with "p" that of the prototype, and establish the following scales:

scale of lengths:  $l_m = \frac{1}{\lambda} l_p$  (1);

scale of time:  $t_m = \frac{1}{\tau} t_p$  (2);

scale of unitary power:  $\sigma_m = \frac{1}{\alpha} \cdot \sigma_p$  (3);

scale of move:  $\sigma_m = \frac{1}{\beta} \cdot \delta_p$  (4);

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scale of elasticity modules:  $E_m = \frac{1}{\gamma} \cdot E_p$  (5).

Each mockup is made for a certain type of stress, and the problems of similarity have to be examined only for the respective stress. The relations thus become more simple and easier to be solved. The authors then study the cases of a mockup made from the same material as the prototype, where  $E_m = E_p = E$  and  $\gamma = 1$ : a) Static stress in the elastic zone: If the mockup is stressed only by external load, the relations between the mockup values and prototype values are:

$P_m = \frac{1}{\alpha} P_p; \epsilon_m = \frac{1}{\alpha} \cdot \epsilon_p; P_m = \frac{1}{\alpha \cdot \lambda^2} P_p; \delta_m = \frac{1}{\alpha \lambda} \cdot \delta_p$  (6).

If the stresses which provide from the proper weight are not neglectable, they have to respect the similarity relation:  $G_m = \frac{1}{\lambda^3} \cdot G_p$ , thus  $\alpha = \lambda$ . This case is not advantageous since the displacements are very small and difficult to be measured. In case the proper weight has to be considered, the similarity relations are:

Card 2/11  $P_m = \frac{1}{\lambda} P_p; \epsilon_m = \frac{1}{\lambda} \cdot \epsilon_p; P_m = \frac{1}{\lambda^3} \cdot P_p; \delta_m = \frac{1}{\lambda^2} \cdot \delta_p$  (?) ✓



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b) Static stresses at heavy axial loads: The deformation scale has to be the same as the scale of the length:  $\frac{1}{\alpha \lambda} = \frac{1}{\lambda}$ ,  $\alpha = 1$

and the similarity relations become:

$$P_m = P_p; \quad \epsilon_m = \epsilon_p; \quad P_m = \frac{1}{\lambda^2} P_p; \quad \delta_m = \frac{1}{\lambda} \delta_p \quad (8)$$

c) Static stresses in the elastic plastical zone: It is necessary that  $\sigma_m = \sigma_p$ , thus  $\alpha = 1$ . The similarity conditions are given in this case by the relations (8). d) Dynamic stresses: The inertial powers interfere in this case with the external stresses. Accepting the time (2), the acceleration ratio is:

$$a_m = \frac{\tau^2}{\alpha \cdot \lambda} \cdot a_p \quad (9)$$

and the inertial power ratio is:

$$\frac{I_m}{I_p} = \frac{m_m \cdot a_m}{m_p \cdot a_p} = \frac{\tau^2}{\alpha \cdot \lambda^4}$$

Since all forces which act on the system have to be in ratio with  $\frac{1}{\lambda}$ , the scale of time is:  $\tau = \lambda$ . (Nr 10). If there are concentrated masses

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( $M_m, M_p$ ) on the construction, it is necessary that

$$\frac{M_m}{M_p} = \frac{1}{\tau^2 \cdot \lambda} = \frac{1}{\lambda^3} \quad (11).$$

The authors then proceed to the examination of mockups made from some other material than the prototype. A good material has to be homogeneous and isotropic, to be easily processable, to have a relatively small elasticity module in order to supply easily measurable deformations.

a) Static stress in the plastic zone: Using the scale of lengths (1) and unitary power (3), results for the scales of forces, extension and displacement:

$$P_m = \frac{1}{\alpha \cdot \lambda^2} P_p, \quad \epsilon_m = \frac{\tau}{\alpha} \epsilon_p, \quad \delta_m = \frac{\tau}{\alpha \cdot \lambda} \delta_p \quad (12).$$

The value of  $\alpha$  is:  $\alpha = \rho \cdot \lambda$  (Nr 13). b) Static load at heavy axial stresses: The similarity can be guaranteed if the influence of the proper weight can be neglected or is replaced by an external stress. By posing the condition:

$$\frac{\delta_m}{\delta_p} = \frac{\epsilon_m}{\epsilon_p} = \frac{1}{\lambda},$$

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one obtains the supplementary relation:  $\alpha = \gamma$ , and the relations:

$$\delta_m = \frac{1}{\lambda} \delta_p; P_m = \frac{1}{\gamma \cdot \lambda^2} \cdot P_p; \epsilon_m = \epsilon_p; \rho_m = \frac{1}{\gamma} \rho_p \quad (14).$$

c) Static stress in the elastic-plastical zone: To obtain a similarity between the behavior of the mockup and the prototype in the elastic-plastical zone, there is a relation necessary between the elasticity modules of the materials used for the construction of the mockup and prototype (Figure 1):

$$\sigma_m = \frac{1}{\alpha} \sigma_p; E_m(\sigma_m) = \frac{1}{\gamma} E_p(\sigma_p) \quad (15)$$

By knowing the values  $\alpha$  and  $\beta$ , the relations between the other parameters are:

$$\epsilon_m = \frac{\gamma}{\alpha} \epsilon_p; P_m = \frac{1}{\alpha \cdot \lambda^2} \cdot P_p; \delta_m = \frac{\gamma}{\alpha \cdot \lambda} \delta_p \quad (16)$$

d) Dynamic stresses: Knowing the coefficients  $\alpha$ ,  $\rho$  and  $\gamma$ , the acceleration ratio is:

$$a_m = \frac{\gamma \cdot \tau^2}{\alpha \cdot \lambda}$$

Card 5/11 an the time scale:

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## Study of the Behavior of Constructions by Experimenting With Mockups From Plastic Materials

$$\frac{1}{\tau} = \frac{1}{\lambda} \sqrt{\frac{1}{\rho} \cdot \tau}. \quad (17)$$

Experiments with plastic mockups are being carried out in many foreign laboratories. The new plastics allow the observation of the plastified zone by a decoloration of the material. This method has been called "Chromoplasticity". Plastics used for the construction of mockups are polyvinyl-chloride varieties, developed at the Institutul de cercetări chimice "ICECHIM" (Chemical Research Institute) by a team led by State Prize Winner N. Goldenberg. Three plastic varieties have been used: 1) "SDE", 2) "SDP-1", and 3) "SDP-2"; "SDP-3" and "SDP-4". SDE: perfect elastic behavior for  $\sigma < p$ , elasticity module at bending:  $E = 36,000$  kg/sq cm, proportionality limit:  $\sigma_p = 550$  kg/sq cm, flow limit:  $\sigma_0 = 600$  kg/sq cm. "SDP-1": becomes white if the tensional flow limit has been reached. Elasticity module at bending: 30,000 - 36,000 kg/sq cm, flow limit: at tension: 550 - 700 kg/sq cm, at compression: 600 - 800 kg/sq cm, at bending: 550 - 750 kg/sq cm. The flow limit values within this interval, depend from the thermal treatment of the material. "SDP-2", "SDP-3" and "SDP-4": elasticity module at bending: 20,000 - 35,000 kg/sq cm, flow limit: at tension: 450 - 500 kg/sq cm,

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