C.V.: Prof. Hesham M. Al-Younes

Personal data:

Surname:	Al-Younes
First names:	Hesham M. M.
Date of Birth:	11.12.1967
Place of birth:	Zarka, Jordan
Marital status:	Married
Nationality:	Jordanian

Position:

Professor-Microbiology/Molecular Biology

Courses that I teach:

General Biology
Practical General Biology
General Microbiology
Applied Microbiology
Advanced Microbiology
Microbial Physiology
Advanced applied Microbiology
General Zoology
Medical Parasitology
Graduation Project

Biography

I was born on 11th December, 1967 in Zarka, Jordan. I had my school education in the same city. In 1985-1989, I studied Biological Analyses at the University of Jordan and got the first University certificate. In 1993, I got the M.Sc. in Zoology from the same University and during that time until 1994 I worked as a research assistant in the parasitology lab and was interested in the parasitic protozoan *Leishmania*. Late in 1994, I worked as teaching and research assistant at Mu'tah University in Jordan teaching Parasitology, general biology lab

and Zoology until I got in 1997 a doctoral scholarship from Germany (DAAD). I got my PhD in 2001 from Humboldt University and did my research at Max Planck Institute for Infection Biology in Berlin. I worked until 2006 as a team leader at the same institute working on elucidating different aspects of interaction between the human bacterial pathogen *Chlamydia* and the mammalian host cell. At the present, I work at the same department in Jordan where I got the first two university certificates, teaching different courses and doing research in the field of microbiology.

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Education:

1973-1978: Elementary school, Zarka, Jordan.

1979-1982: Preparatory school, Zarka, Jordan.

1983-1985: High school, Zarka, Jordan.

1985-1989: B.Sc. of Biological Analyses, Dept. of Biological Sciences, the University of Jordan, Amman, Jordan.

1989-1993: M.Sc. of Zoology, Faculty of Graduate Studies, the University of Jordan, Amman, Jordan.

1997-2001: Ph.D. fellowship from Deutscher Akademischer Austauschdienst (DAAD), supervised by Prof. Thomas F. Meyer at the Max Planck institute for Infection Biology, Berlin and Prof. Richard Lucius, Institute of Biology, Humboldt University, Berlin.

Work experience:

Sept. 2006-present: **Professor**, Dept. of Biological Sciences, the University of Jordan, Amman, Jordan.

Aug. 2015-Jun. 2016: One-year sabbatical leave spent at Al-Ghad International Colleges for Applied Medical Sciences, Al-Madinah Al-Monawwara, Kingdom of Saudi Arabia.

Feb. 2002-Aug. 2006: **Research team leader** at Max Planck Institute for Infection Biology, Berlin, Germany. Research interests were:

1. Investigation of the effects of exogenously supplemented amino acids on the growth of the bacterium *Chlamydia*.
2. Examination of the impact of iron on the development of *Chlamydia* in host cells.
3. Interaction of *Chlamydia* with the autophagic pathway of the mammalian host cell.

Apr. 1994-Mar. 1997: **Teaching assistant**, Dept. of Biology, Mu′tah University, Karak, Jordan.

Oct. 1993-Mar 1994: **Research assistant** in the Parasitology Laboratory, Dept. of Biological Sciences, the University of Jordan.

1989-1993: **Teaching assistant** in laboratories of General Biology, Invertebrates, and Parasitology, Dept. of Biological Sciences, during the M.Sc. study.

Administration activities:

- Head of the Department of Biological Sciences in the Summer Semester 2017-2018.

Research interests (Area of expertise):

1. Interaction of mammalian host cell with obligate intracellular bacteria, such as *Chlamydia*.
2. Pathogenesis and correlation of obligate intracellular bacteria with various human diseases and molecular diagnostic methods of microbial infections. These microbes include *Chlamydia* spp. and *Chlamydia*-like bacteria (*Simkania negevensis*, *Waddlia chondrophila* and *Parachlamydia acanthamoebae*)
3. Discovering new compounds with anti-microbial activity.

Research grants:

1. Grant from the Deanship of Scientific Research, the University of Jordan, 2008 (23,000.00 JD).
2. Laboratory equipment grant from the German Academic Exchange Service (DAAD), 2009 (20,000.00 Euro).
3. Grant from the Deanship of Scientific Research, the University of Jordan, 2009 (12,000.00 JD).
4. Grant from the Scientific Research Fund, Ministry of Higher Education and Scientific Research, 2009 (31,811.00 JD).
5. Grant from the Deanship of Scientific Research, the University of Jordan, 2020 (5,000.00 JD).
6. Grant from the Deanship of Scientific Research, the University of Jordan and the National Center for Research and Development (the Supreme Council for Science and Technology), 2022 (30,000.00 JD).

Graduate student supervision:

1. Supervision of the MSc. student Noora Al-Yateem, who defended successfully her thesis in 2022. The title of thesis is: "Molecular Screening of Urogenital Tract of Adult Males for *Simkania negevensis*".
2. Supervision of the MSc. student Raneem Abu-Saif, who defended successfully her thesis in 2020. The Title of thesis is: “Molecular Screening of *Simkania negevensis* in Clinical Samples Taken from Jordanian Population”.
3. Supervision (Co-advisor) of the MSc. student Tahany Saleem Al-Hajaya, who defended successfully her thesis in 2016. The title is "The Prevalence of *Chlamydia pneumoniae* in Patients with Community-Acquired Pneumonia in Al-Karak Governorate".
4. Supervision of the MSc. student Suzan Naser Al-Aydie, who defended successfully her thesis in 2014. The Title of thesis is: "The Role of *Chlamydia pneumoniae* in Community-Acquired Pneumonia and Bronchitis in Jordanian Population".

Committee membership for research theses and dissertations:

1. 2020- A committee member, internal examiner for the research MSc. thesis of Ali Salameh at the University of Jordan, College of Pharmacy. The title is: Antibacterial Peptides: Synthesis and Potential Activity on Clinically Important Bacteria.
2. 2019- A committee member, internal examiner for the research MSc. thesis of Haya Rashed at the University of Jordan. The title is: Carbapenem resistance patterns of *Pseudomonas aeruginosa* in Jordan and their underlying mechanisms.
3. 2019- A committee member, internal examiner for the research MSc. thesis of Ahmed E. Fakhrulddin at the University of Jordan. The title is: Detection of *Entamoeba* in Jordanian clinical samples by traditional and molecular methods.
4. 2017- A committee member, internal examiner for the research MSc. thesis of Haneen Al-Sarairah at the University of Jordan. The title is: The Molecular Epidemiology of Torque Teno Virus (TTV) in Jordan.
5. 2017- A committee member, internal examiner for the research MSc. thesis of Alyaa A. Mohammed at the University of Jordan, College of Agriculture. The title is: Antimicrobial Effectiveness of Edible Coatings Containing Zinc Oxide and Titanium Dioxide Against *Salmonella* and *Pseudomonas* in Raw Chicken.
6. 2015- A committee member, internal examiner for the research MSc. thesis of Afrah M. Al-Shawk at the University of Jordan. The title is: Understanding Bacterial Pathogenicity: Would Iron Overload in Patients with Hematological Disorders Increase the Risk of Infections and/or Aggravate Ongoing Infections?
7. 2013- Dissertation committee member, external member, to evaluate the doctoral thesis of Mohammad A. Abu Lubad entitled: New Mechanism of Immune Evasion by *Chlamydia trachomatis* in Mesenchymal Stem Cells. Humboldt University in Berlin, Germany.
8. 2010- Dissertation committee member, external member, to evaluate the doctoral thesis of Hany Hamed Khalil entitled: Influenza A Virus Exploits Cellular microRNA-141 and Autophagy for Successful Replication. Humboldt University in Berlin, Germany.

Evaluation of scientific research proposals and other activities:

- Reviewing and evaluation of research projects submitted to gain funding from supporting institutions, centers and agencies.

- Evaluation and reviewing of manuscripts submitted to various periodical research journals and verifying their suitability for publication.
- Evaluation of scientific research applied for reputable prizes.
- Evaluation of applications submitted for academic promotions.

Research visits: funded by the German Research Foundation (DFG), to Max-Planck Institute for Infection Biology, Department of Molecular Biology, Berlin, Germany, during the following periods:

- June-September, 2007
- June-September, 2008
- June-September, 2009
- June-September, 2010
- June-September, 2011
- June-September, 2012
- January-February, 2013

Workshop attendance:

- Jordan Flow Cytometry Workshop and Teaching, organized by the German Academic Exchange Service and Beckman Coulter, October 4th-October 6th, 2018. Dead Sea, Jordan

Patent application:

1. "Methods for delivery of substances to intracellular microorganisms". 2003. Co-applicants: D. Heuer, Drs. A. Szczepek and M. Dittrich, and Prof. T. F. Meyer.
2. "Prophylaxis of and treatment for infections with microorganisms from the family Chlamydiaceae". 2004. Co-applicant: Prof. Thomas F. Meyer.

Publications (Peer-reviewed manuscripts):

1. **Al-Younes, H. M.**, N. I. Alyateem, R. A. Abu-Saif, H. Alnawaiseh, and M. Abufaraj. 2023. Molecular screening of urogenital tract of adult males for *Simkania negevensis*. Submitted.

2. Abu-Saif, R. A., A. S. Al-Basha, and **H. M. Al-Younes**. 2023. First evidence for the existence of *Simkania negevensis* in the genitalia of human females. Enfermedades Infecciosas y Microbiología Clínica, 24(2):79-84.

3. Al-Hajaya, T. S., W. Al-Zereini, and **H. M. Al-Younes**. 2020. *Chlamydia pneumoniae* infection in patients hospitalized for community-acquired pneumonia in Southern Jordan. *Indian Journal of Medical Microbiology*, 38(3-4):338-343.

4. **Al-Younes, H. M.**, W. Al-Zereini, and N. M. Obeidat. 2017. Molecular evidence for the absence of an association between *Simkania negevensis* and respiratory diseases. *Journal of Medical Microbiology*, 66(9):1324-1327.

5. **Al-Younes, H. M.**, M. A.-R. Abu Abeeleh, and B. M. Jaber. 2016. Lack of strong association of *Chlamydia pneumoniae* and atherosclerosis in a Jordanian population. *Journal of Infection in Developing Countries,* 10:457-464.

6. Al-Aydie, S., N. M. Obeidat, and **H. M. Al-Younes**. 2016. Role of *Chlamydia pneumoniae* in community-acquired pneumonia in hospitalized Jordanian adults. *Journal of Infection in Developing Countries*, 10:227-236.

7. **Al-Younes, H. M**., and M. Paldanius. 2014. High seroprevalence of *Simkania negevensis* in Jordan. *Brazilian Journal of Microbiology*, 45(4):1433-1437.

8. Al-Zeer, M. A., **H. M. Al-Younes**, M. Kerr, M. Abu-Lubad, E. Gonzalez, V. Brinkmann, and T. F. Meyer. 2014. *Chlamydia trachomatis* remodels stable microtubules to coordinate Golgi stack recruitment to the chlamydial inclusion surface. *Molecular Microbiology*, 94:1285-1297.

9. **Al-Younes, H. M.** 2014. High prevalence of *Chlamydia pneumoniae* infection in an asymptomatic Jordanian population. *Journal of Microbiology, Immunology and Infection*, 47:412-417.

10. Al-Zeer M. A., **H. M. Al-Younes**, D. Lauster, M. Abu Lubad, and T. F. Meyer. 2013. Autophagy restricts *Chlamydia trachomatis* growth in human macrophages via IFNγ-inducible guanylate binding proteins. *Autophagy*. 9(1):50-62.

11. Klionsky, D. J, F. C. Abdalla, H. Abeliovich, R. T. Abraham, A. Acevedo-Arozena, K. Adeli, L. Agholme, M. Agnello, P. Agostinis, J. A. Aguirre-Ghiso, H. J. Ahn, O. Ait-Mohamed, S. Ait-Si-Ali, T. Akematsu, S. Akira, **H. M. Al-Younes** et al. 2012. Guidelines for the use and interpretation of assays for monitoring autophagy. *Autophagy*, 8(4):445-544.

12. **Al-Younes, H. M**., M. A. Al-Zeer, H. Khalil, J. Gussmann, P. R. Braun, A. Karlas, N. Machuy, V. Brinkmann, and T. F. Meyer. 2011. Autophagy-independent function of

MAP-LC3 during intracellular propagation of *Chlamydia trachomatis*. *Autophagy*, 7(8):814-828.

13. **Al-Younes, H. M**. and T. F. Meyer. 2011. Host ferritin translocates into the chlamydial inclusion: a clear alteration in its subcellular distribution as a result of infection. Dirasat 38(1):24-33.
14. **Al-Younes, H. M**. 2009. Seroprevalence of *Chlamydia pneumoniae* in male adults in Jordan. *Dirasat* 36(1):1-6.
15. Al-Zeer, M. A., **H. M. Al-Younes**, P. R. Braun, J. Zerrahn, and T. F. Meyer. 2009. IFN-gamma-inducible Irga6 mediates host resistance against *Chlamydia trachomatis* via autophagy. *PLoS ONE* 4(2):e4588.
16. Braun, P. R., **H. Al-Younes,** J. Gussmann, J. Klein, E. Schneider, and T. F. Meyer. 2008. Competitive inhibition of amino acid uptake suppresses chlamydial growth: Involvement of the chlamydial amino acid transporter BrnQ. *Journal of Bacteriology* 190(5):1822-1830.
17. Gussmann, J., **H. M. Al-Younes,** P. R. Braun, V. Brinkmann, and T. F. Meyer. 2008. Long-term effects of natural amino acids on infection with *Chlamydia trachomatis*. *Microbial Pathogenesis* 44(5):438-447.
18. **Al-Younes, H. M.**, J. Gussmann, P. R. Braun, V. Brinkmann, and T. F. Meyer. 2006. Naturally occurring amino acids differentially influence the development of *Chlamydia trachomatis* and *Chlamydia* (*Chlamydophila*) *pneumoniae*. *Journal of Medical Microbiology* 55(7):879-886.
19. **Al-Younes, H. M.**, V. Brinkmann, and T. F. Meyer. 2004. Interaction of *Chlamydia trachomatis* serovar L2 with the host autophagic pathway. *Infection and Immunity* 72(8):4751-4762.
20. **Al-Younes, H. M.**, T. Rudel, V. Brinkmann, A. J. Szczepek, and T. F. Meyer. 2001. Low iron availability modulates the course of *Chlamydia pneumoniae* infection. *Cellular Microbiology* 3(6):427-437.
21. Rajalingam, K., **H. M. Al-Younes**, A. Mueller, T. F. Meyer, A. J. Szczepek, and T. Rudel. 2001. Epithelial cells infected with *Chlamydophila pneumoniae* (*Chlamydia pneumoniae*) are resistant to apoptosis. *Infection and Immunity* 69(12):7880-7888.
22. **Al-Younes, H.**, E. K. Saliba, M. Al-Khateeb, S. Khoury, O. Y. Oumeish, and M. Othman. 1999. Humoral response of *Meriones libycus* to experimental infection with *Leishmania major*. *Annals of Tropical Medicine and Parasitology* 93(3):239-245.

23. **Al-Younes, H. M.**, T. Rudel, and T. F. Meyer. 1999. Characterization and intracellular trafficking pattern of vacuoles containing *Chlamydia pneumoniae* in human epithelial cells. *Cellular Microbiology* 1(3):237-247.
24. Saliba, E. K., A. M. Disi, R. E. Ayed, N. Saleh, **H. Al-Younes**, O. Oumeish, and R. Al-Ouran. 1994. Rodents as reservoir hosts of cutaneous leishmaniasis in Jordan. *Annals of Tropical Medicine and Parasitology* 88(6):617-622.

Conferences:

1. **Al-Younes, H. M.**, M. Abu-Abeeleh, and B. M. Jaber. (May 2-5) 2012. *Chlamydia pneumoniae* infection and its association with atherosclerosis in Jordan. The 13th Arab Congress of Clinical Chemistry, Marrakech, Morocco. Poster. Published in *Clinical Chemistry and Laboratory Medicine* 50(4):A123-A124.
2. **Al-Younes, H. M.,** J. Gussmann, P. R. Braun, and T. F. Meyer. (October 6 -10) 2010. Long-term effects of supplementation with certain amino acids on *Chlamydia* infection *in vitro*. 11th Eurasia Conference on Chemical Sciences, the Dead Sea, Jordan. Poster. Abstract Book p. 191.
3. Hany Khalil, Munir A. Al-Zeer, Alexander Karlas, **Hesham Al-Younes**, and Thomas F. Meyer. (April 7-11) 2010. IFN-β modulation of the host autophagy as a novel antiviral strategy. The 4th European Congress of Virology. Villa Erba Congress Center-Cornobbio, Lake Como, Italy. Presentation and poster. Abstract book p.113.
4. Hany Khalil, Munir Al-Zeer, Alexander Karlas, **Hesham Al-Younes**, Gerorgy Keri, and Thomas F. Meyer. (September 9-12) 2009. A novel chemical drug inhibits Influenza A virus replication via down-regulation of autophagy in Raf-1 dependent process. The 5th Orthomyxoviurs Research Conference. Medical Microbiology Institute**,** Freiburg University, Freiburg, Germany. Abstract book p. 77.
5. **Al-Younes, H. M.**, J. Gussmann, P. R. Braun, and T. F. Meyer. 2009. hLC3 associates with microtubules around *Chlamydia trachomatis* inclusions. The First International Conference of Biological Sciences (ICBS), Assiut University, Assiut, Egypt. Abstract book p. 155.
6. Al-Zeer, M., **H. M. Al-Younes,** and T. F. Meyer. (July 1-4) 2008. The interferon-inducible GTPase IIGP1 functions in resistance against *Chlamydia trachomatis* via autophagy. 6th Meeting of the European Society for *Chlamydia* Research, Aarhus, Denmark. Abstract book p. 328.

7. **Al-Younes, H. M.** 2007. Autophagy-independent function of MAP1/LC3 in replication of intracellular *Chlamydia trachomatis*. Molecular Pathogenesis of Infectious Diseases Symposium, Max Planck Institute for Infection Biology, Berlin, Germany. Presentation.
8. Braun, P. R., **H. M. Al-Younes**, and T. F. Meyer. (April 15-20) 2007. Autophagy related cellular factors are differentially involved in *Chlamydia trachomatis* infections. Keystone Symposia: Autophagy in Health and Disease. Monterey, CA, USA.
9. Braun, P. R. **H. M. Al-Younes**, M. Al-Zeer, and T. F. Meyer. (March 14-17) 2007. *Chlamydia trachomatis* is independent of autophagy but requires distinct autophagy related factors. 30th Annual Meeting of the German Society for Cell Biology, Frankfurt/Main, Germany.
10. **Al-Younes, H. M.**, J. Gussmann, P. R. Braun, and T. F. Meyer. (March 1-3) 2006. LC3 translocates via microtubules to the *Chlamydia trachomatis* inclusion and is required for the pathogen growth. The 4th German Chlamydial Workshop, Duesseldorf, Germany. Presentation.
11. Braun, P. R., **H. M. Al-Younes,** J. Gussmann, and T. F. Meyer. (March 1-3) 2006. Molecular mechanisms underlying the amino acid-induced suppression of *Chlamydia* growth. The 4th German Chlamydial Workshop, Duesseldorf, Germany. Presentation.
12. **Al-Younes, H. M.**, J. Gussmann, P. R. Braun, and T. F. Meyer. 2005. hLC3 associates with microtubules around *Chlamydia trachomatis* inclusions. The second European Initiative for Basic Research in Microbiology and Infectious Diseases (EIMID), Gällöfsta, Sweden. Abstract book p. 18.
13. **Al-Younes, H. M.**, J. Gussmann, P. R. Braun, V. Brinkmann, and T. F. Meyer. 2005. *In vitro* effects of excess amino acids on *Chlamydia trachomatis* and *Chlamydia* (*Chlaymdophiola*) *pneumoniae*: a comparative study. Ninth International Congress on Amino Acids and Proteins (ICAAP), Vienna, Austria. Published in *Amino acids – The forum of Amino Acid and Protein research* 29:9.
14. Gussmann, J., **H. M. Al-Younes**, P. R. Braun, and T. F. Meyer. (September 8 -9) 2005. Long-term effects of supplementation with certain amino acids on *Chlamydia* infection *in vitro*. The First Annual ZIBI/Sackler Institute Symposium on Host Pathogen Interactions, New York University School of Medicine, New York, poster #29. Abstract book p.13.
15. Braun, P. R., **H. M. Al-Younes**, J. Gussmann, and T. F. Meyer. (September 8 -9) 2005. How can certain amino acids suppress chlamydial growth. The First Annual

ZIBI/Sackler Institute Symposium on Host Pathogen Interactions, New York University School of Medicine, New York, poster #30. Abstract book p.14.

16. Braun, P. R., **H. M. Al-Younes**, J. Gussmann, and T. F. Meyer. (August 26-27) 2005. How can certain **a**mino acids suppress chlamydial growth? ZIBI-Forschungswochenende. Zeuthen, Germany.
17. Gussmann, J., **H. M. Al-Younes**, P. R. Braun, and T.F. Meyer. (August 26-27) 2005. Long-term effects of supplementation with certain amino acids on *Chlamydia* infection *in vitro*. ZIBI-Forschungswochenende, Zeuthen, Germany.
18. **Al-Younes, H. M.**, V. Brinkmann, and T. F. Meyer. 2005. Chlamydial interaction with the host autophagic pathway. 2005. Autophagy in Stress, Development and Disease, Barga, Italy. Poster.
19. **Al-Younes, H. M.**, V. Brinkmann, and T. F. Meyer. 2004. Interaction of *Chlamydia trachomatis* serovar L2 with the host autophagic pathway. The first European Initiative for Basic Research in Microbiology and Infectious Diseases (EIMID), Berlin, Germany. Abstract book p. 8.
20. **Al-Younes, H. M.**, V. Brinkmann, and T. F. Meyer. 2004. Chlamydial interaction with the host autophagic pathway. Joint EMBO/FEBS Workshop: Frontiers of cellular Microbiology and Cell Biology, San Feliu de Guixols, Spain. Poster.
21. **Al-Younes, H. M.**, V. Brinkmann, and T. F. Meyer. (September 1-4) 2004. Chlamydial interaction with the host autophagic pathway. 5th Meeting of the European Society for *Chlamydia* Research, Budapest, Hungary. Abstract book p. 29.
22. Gussmann, J., **H. M. Al-Younes**, and T. F. Meyer. (September 1-4) 2004. Long-term effects of elevated concentrations of amino acids on *Chlamydia* infection *in vitro*. 5th Meeting of the European Society for *Chlamydia* Research, Budapest, Hungary. Abstract book p. 37.
23. **Al-Younes, H. M.**, A. Szczepek, V. Brinkmann, and T. F. Meyer. 2003. Interaction of chlamydial pathogens with the autophagic pathway of the host cell. The 55th Conference of DGHM, Dresden, Germany. *Int. J. Med. Microbiol*. 293(S36):120.
24. **Al-Younes, H. M.**, T. Rudel, and T. F. Meyer. 2000. Characterization and intracellular trafficking pattern of vacuoles containing *Chlamydia pneumoniae* in human epithelial cells. Microbiology 2000 (Congress of DGHM, ÖGHMP and VAAM), Munich, Germany. Abstract book p. 118.
25. Saliba, E. K., R. Al-Oran, and **H. Al-Younes**. 1995. Preliminary analysis of the ecology of *Bulinus truncatus* snail in seil Al-Hasa, Karak governorate. The 5th

International and Pan-Arab Seminar on Leishmaniasis and other Zoonoses, Amman, Jordan. Abstract book p. 51.

26. Saliba, E. K., R. Al-Oran, O. Y. Oumeish, N. Saleh, **H. Al-Younes**, M. Al-Jefout, and A. Sabayleh. 1995. Cutaneous leishmaniasis in Tafileh governorate, Southern Jordan. The 5th International and Pan-Arab Seminar on Leishmaniasis and other Zoonoses, Amman, Jordan. Abstract book p. 44.

27. Al-Younes, H., E. Saliba, M. Al-Khateeb, S. Khoury, and M. Othman. 1993. Humoral response to *Leishmania major* (Kinetoplastida: Trypanosomatidae) in experimentally infected *Meriones libycus* (Rodentia: Cricetidae). The 4th International and Pan-Arab Seminar on Leishmaniasis and other Zoonoses, Amman, Jordan. Abstract book pp. 53-54.

28. Saliba, E., **H. Al-Younes**, A. Disi, and O. Oumeish. 1993. Susceptibility of *Meriones libycus* (Rodentia: Cricetidae) to an experimental infection with *Leishmania major* (Kinetoplastida: Trypanosomatidae). The 4th International and Pan-Arab Seminar on Leishmaniasis and other Zoonoses, Amman, Jordan. Abstract book p. 53.