

Introduction

"Current Contents" prepared by Library and Documentation Division aims to identify the articles published in the learned journals received by the library in the month of October, 2019.

Current Contents are arranged alphabetically under the broad subject headings. It gives the details about the name of the Journal, volume, issue month and year of publication. It will be our endeavour to bring out this as a reference tool, which will make our readers aware about the current contents available in different learned journals of their subject of interest.

Current Contents will be useful to our faculty members in selecting/recommending relevant articles for their research.

Keeping in mind the integration of ICT and Digitisation, attempt has been made to provide the Web-link of the current issues, which will facilitate the readers to access the articles, except the '*' marked journal titles We eagerly await to received your views and comments.

2-11-20
22/11/2020

(Prof. Saroj Yadav)

Chairperson, LDD

Sr. No.	Name of Journals	Vol.	Issue	Month	Year	Pages
Biology						
1.	<u>Biochemistry and Molecular Biology Education</u>	47	5	Sep-Oct	2019	11-12
2.	<u>Journal of Biological Education</u>	53	2 5	Apr Nov	2019	77-78
Economics						
3.	Economist	432 433 433 433	9162 9163 9164 9166	28 Sep 5 Oct 12 Oct 26 Oct	2019	43-50
4.	Economics of Education Review	72		Oct	2019	42
5.	<u>The Indian Economic and Social History Review</u>	56	3	Jul-Sep	2019	72
Education						
6.	<u>Cambridge Journal of Education</u>	49	1 2 3 4 5	Feb Apr Jun Aug Oct	2019	14-18
7.	<u>International Journal of Inclusive Education</u>	23	9-10	Sep-Oct	2019	74
Educational Psychology						
8.	<u>British Journal of Educational Psychology</u>	89	3	Sep	2019	13
9.	<u>Contemporary Educational Psychology</u>	57 58		Apr Jul	2019	36-38
10.	<u>Educational Psychologist</u>	54	3	Jul-Sep	2019	51
11.	<u>Educational Psychology in Practice</u>	35	2 3	Jun Sep	2019	52-53
Educational Research						
12.	शैक्षणिक संदर्भ	66	123	Jul-Aug	2019	114
13.	<u>American Educational Research Journal</u>	56	4	Aug	2019	1
14.	<u>Harvard Educational Review</u>	89	1 2 3	Spring Summer Fall	2019	66-71
15.	<u>Review of Educational Research</u>	89	4	Aug	2019	113

Educational Technology						
16.	Computers and Education	130 131 132 133 134 135 136 137 138 139 140		Mar Apr Apr May Jun Jul Jul Aug Sep Oct Oct	2019	24-35
17.	<u>Journal of Computer Assisted Learning</u>	35	5	Oct	2019	79
18.	<u>Technology; Pedagogy and Education</u>	28	3	Jun	2019	131
Environmental Education						
19.	<u>Globalisation, Societies and Education</u>	17	1 3 4	Feb Jun Aug	2019	63-65
20.	<u>International Research in Geographical and Environmental Education</u>	28	3 4	Aug Nov	2019	75-76
21.	Resurgence & Ecologist		316	Sep-Oct	2019	112
Geography						
22.	National Geographic Magazine	7	3	Oct	2019	97-98
Higher Education						
23.	University News	57	38 39	23 Sep 30 Sep	2019	132-135
Library Science						
24.	Library Herald : Journal of the Delhi Library Association	57	3	Sep	2019	95
25.	SRELS Journal of Information Management	56	4	Aug	2019	130
Linguistics						
26.	ELT Journal	73	1 2	Jan, Apr	2019	56-59
27.	English Teaching Professional		124	Sep	2019	60
28.	<u>Chakmak (HIN)</u>	397	10	Oct	2019	19
Mathematics Education						
29.	<u>Journal of Mathematics Teacher Education</u>	22	5	Oct	2019	82

30.	Mathematics Teaching		268	Sep	2019	96
Physics						
31.	American Journal of Physics	87	9 10 12	Sep Oct Dec	2019	2-7
32.	<u>Physics Education</u>	54	5	Sep	2019	102-103
33.	<u>Physics Today</u>	72	9	Sep	2019	104-105
34.	<u>Physics World</u>	32	9	Sep	2019	106
35.	<u>Pramana: Journal of Physics</u>	93	4	Oct	2019	107-108
Psychology						
36.	American Psychologist	74	6	Sep	2019	8-10
37.	<u>Cognitive Psychology</u>	114		Nov	2019	22
38.	<u>Journal of Humanistic Psychology</u>	59	4	Jul	2019	80
39.	<u>Journal of School Psychology</u>	72 73 74 75		Feb Apr Jun Aug	2019	84-91
40.	Psychological Bulletin	145	9	Sep	2019	109
41.	<u>Psychology and Developing Societies</u>	31	2	Sep	2019	110
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42.	<u>Current Science</u>	117	6	25 Sep	2019	39-41
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44.	Science	365	6457 6458 6459 6462	6 Sep 13 Sep 20 Sep 11 Oct	2019	116-123
Science Education						
45.	Education in Science		277	Sep	2019	54-55
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47.	<u>Resonance: Journal of Science Education</u>	24	10	Oct	2019	11
48.	Science Education	103	5	Sep	2019	124-125
49.	<u>Scientific American</u>	321	4	Oct	2019	126-127
50.	<u>School Effectiveness and School Improvement</u>	30	3	Sep	2019	115
Social Science						
51.	<u>Seminar</u>	722		Oct	2019	128
52.	Social Scientist	47	7-8	Jul-Aug	2019	129

53.	Young Children	74	4	Sep	2019	36
Special Education						
54.	<u>Intellectual and Developmental Disabilities</u>	57	5	Oct	2019	73
Teacher Education						
55.	<u>European Journal of Teacher Education</u>	42	1 4	Feb Oct	2019	61-62
Values Education						
56.	<u>Childhood: A Journal of Global Child Research</u>	26	3	Aug	2019	20-21
57.	<u>Journal of Human Values</u>	25	3	Sep	2019	81

American Educational Research Journal

Volume 56, Number 4—August 2019

- 1067 Impacts of a Practice-Based Professional Development Program on Elementary Teachers' Facilitation of and Student Engagement With Scientific Argumentation
Jonathan F. Osborne, Hilda Borko, Evan Fishman, Florencia Gomez Zaccarelli, Eric Berson, K. C. Busch, Emily Reigh, and Anita Tseng
- 1113 A *Revolucionista* Ethic of Care: Four Mexicana Educators' Subterranean Social Justice Revolution of Fighting and Feeding
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- 1148 Explanatory Modeling in Science Through Text-Based Investigation: Testing the Efficacy of the Project READI Intervention Approach
Susan R. Goldman, Cynthia Greenleaf, Mariya Yukhymenko-Lescroart, Willard Brown, Mon-Lin Monica Ko, Julia M. Emig, MariAnne George, Patricia Wallace, Dylan Blaum, M. Anne Britt, and Project READI
- 1217 Comparing the Effects of Analysis-of-Practice and Content-Based Professional Development on Teacher and Student Outcomes in Science
Kathleen J. Roth, Christopher D. Wilson, Joseph A. Taylor, Molly A. M. Stubbsatz, and Connie Hvidsten
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- 1281 Being "Loud": Identities-in-Practice in a Figured World of Achievement
Limarys Caraballo
- 1318 Racial Identity, Racial Discrimination, and Classroom Engagement Outcomes Among Black Girls and Boys in Predominantly Black and Predominantly White School Districts
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- 1353 "A Different Kind of Activism": The University of Florida Committee on Sexism and Homophobia, 1981–1992
Brittney L. Beck
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Sarah A. Cordes, Amy Ellen Schwartz, and Leanna Stiefel
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Arya Ansari, Robert C. Pianta, Jessica V. Whittaker, Virginia E. Vitiello, and Erik A. Ruzek
- 1524 An Ethnographic Account of Educational Landscape in Pakistan: Myths, Trends, and Commitments
Mubammad Bilal

All articles were accepted under the co-editorship of Mark Berends, Francesca López, Julianne C. Turner, and Suzanne Wilson.



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University of Colorado,
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University of Texas, Austin
Science Education,
University of California, Berkeley
Oxford
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September 2019

Cover figure: A “rattleback,” which can rotate stably only in one direction, is fabricated by attaching a uniform rectangular prism to a uniform semi-ellipsoid. The cover image shows the prism rotated by 10 degrees about the z-axis, creating enough “skewness” in the moment of inertia tensor to produce rattleback behavior. For details, see the article on p. 699.

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and Carl Nord*
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Kannan Jagannathan

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Cover figure: The apparatus shown can rotate a wine glass under a stationary finger, or move a rubber finger around a stationary wine glass. The different acoustical spectra produced are explained in the article on p. 829.

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Alexei Kojevnikov

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Cover figure: The gravity tunnel (purple tube) inside a rotating spheroidal body, in the rotating frame. For details see the article on p. 924.

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959 *Signatures of the Artist: The Vital Imperfections That Make Our Universe Habitable* by Steven E. Vigdor

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RUNNING IN CIRCLES LOOKING FOR A GREAT TEACHING JOB OR HIRE?

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- Postdoctoral Researcher
- Tenure-Track Professor
- Research Faculty
- Lecturer
- Department Chair
- Laboratory Instructor
- High School Physics Teacher



AMERICAN PSYCHOLOGIST®

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On the cover: Cochiti, 2015, by Jorge Luis Bernal. Cold wax and oils, 24 inches by 34 inches. Courtesy of the artist, <http://www.jorgeluisbernal.com>. See p. 747 for more about Bernal and his art.

Special Section: Psychology's Contributions to Understanding and Alleviating Poverty and Economic Inequality Special Section Editors: Heather E. Bullock and Diane M. Quinn

635 Psychology's Contributions to Understanding and Alleviating Poverty and Economic Inequality: Introduction to the Special Section
Heather E. Bullock

Poverty, concentrated wealth, and rising income inequality are among the most pressing issues facing society. This introduction to the special section draws attention to high rates of poverty in the United States and highlights psychology's contributions to understanding and alleviating poverty and economic inequality. In doing so, the need for psychological research, teaching, practice, and advocacy that reduces these disparities is illuminated.

641 Protective Factors for Youth Confronting Economic Hardship: Current Challenges and Future Avenues in Resilience Research
Camelia E. Hostinar and Gregory E. Miller

Childhood poverty is prevalent in the United States and can compromise physical and mental health. Nevertheless, some children in poverty exhibit resilient functioning. This review synthesizes evidence on factors promoting resilience, while highlighting trade-offs associated with adaptation that challenge our conception of what it means to be resilient. We outline a research agenda for resolving three major challenges in resilience research.

653 *Reducing Poverty and Inequality Through Preschool-to-Third-Grade Prevention Services*
Arthur J. Reynolds, Suh-Ruu Ou, Christina F. Mondí, and Alison Giovanelli

The War on Poverty/Great Society era created new social programs designed to enrich families and revitalize communities. Early childhood programs in the first decade of life were among the most innovative and aimed to alleviate intergenerational poverty. In this article, the authors describe psychology's contributions to the development, growth, and evaluation of preschool to 3rd-grade services with an empirical example examining the long-term impacts on adult economic well-being of the Child-Parent Centers, one of the leading early childhood education models.

673 Employment and Poverty: Why Work Matters in Understanding Poverty
Mindi N. Thompson and Jason J. Dahling

Psychological research examining paid work, and lack thereof, can inform attempts to understand and alleviate poverty. This article synthesizes major themes and insights from the work psychology literature to better recognize how people experience, and recover from, economic poverty through access to decent work. The authors' analysis yields recommendations for future policy, advocacy, and psychological practice.

685 The Role of Psychology in Evidence-Based Policymaking: Mapping Opportunities for Strategic Investment in Poverty Reduction
Max Crowley, Lauren Supplee, Taylor Scott, and Jeanne Brooks-Gunn
 Systematic analysis of poverty legislation highlights the role of psychology in federal policy over the last two decades. This work explores the frequency with which psychology is cited in legislation, models the relationship between policymakers' attributions about the causes of poverty and their voting behavior, and identifies opportunities to better support evidence-based policymaking broadly.

Articles

698 Mapping 24 Emotions Conveyed by Brief Human Vocalization
Alan S. Cowen, Hillary Anger Elfenbein, Petri Laukka, and Dacher Keltner
 Recall the last time you heard laughter, crying, sighs, triumphant hollers, growls, or motherese. What did it mean? The answer to this question is a point within a complex space of vocal emotion, a territory that is still largely uncharted. The authors apply computational approaches to map out the emotional states we communicate with the voice, yielding an extraordinarily rich and understudied atlas of nonverbal expression.

713 Synergistic Dependencies in Partner and Elder Abuse
Robert F. Bornstein
 Why do abusers remain in abusive relationships? Although research has focused primarily on dependency in victims, scrutiny of the literature reveals that synergistic dependencies—situations wherein two people show unhealthy dependency on each other—are associated with increased risk for partner abuse and elder maltreatment. Examination of these synergistic dependencies illuminates key abuse dynamics and suggests avenues for prevention and intervention.

725 Transdisciplinary Team Science for Global Health: Case Study of the JUS Media? Programme
Gail M. Ferguson, Barbara H. Fiese, Michelle R. Nelson, and Julie M. Meeks Gardner
 The world's most pressing health problems, such as the childhood obesity pandemic, demand creative new solutions. This article argues that psychology is ripe for integration with other disciplines to synthesize innovative transdisciplinary global health interventions. As a model, this article details the development of the J(amaican and) U(nited) S(tates) Media? Programme, which blends developmental and cross-cultural psychology with health and media sciences to improve nutrition.

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Biochemistry and Molecular Biology Education

SEPTEMBER/OCTOBER 2019
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Donald E. Elmore

Published online 25 July 2019 in Wiley Online Library | DOI: 10.1002/bmb.21285

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Teaching Progressions and Learning Progressions (pages 493–497)

Adele J. Wolfson

Published online 7 August 2019 in Wiley Online Library | DOI: 10.1002/bmb.21286

Flexible Implementation of the BASIL CURE (pages 498–505)

Rebecca Roberts, Bonnie Hall, Colette Daubner, Anya Goodman, Michael Pikaart, Arthur Sikora and Paul Craig

Published online 5 August 2019 in Wiley Online Library | DOI: 10.1002/bmb.21287

Developmental Science Concepts Guide Effective Support of Underrepresented STEM Students (pages 506–512)

Karen Singer-Freeman and Linda Bastone

Published online 24 August 2019 in Wiley Online Library | DOI: 10.1002/bmb.21292

Using Expert Data to Inform the Use of Research Methods and Representations to Enhance Biochemistry Instruction and Textbook Design (pages 513–531)

Kathleen A. Jeffery, Nancy J. Pelaez and Trevor R. Anderson

Published online 23 May 2019 in Wiley Online Library | DOI: 10.1002/bmb.21255

Using Metro Lines for Integration of Nucleotide Metabolic Pathways (pages 532–537)

Rebecca K. Y. Lee, Bernard Y. N. Ng and Daisy M. H. Chen

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Impact of Automated Response Systems on In-Class Cell Phone Use (pages 538–546)

Dylan M. Moorleggen, Naresh Oli, Alison J. Crowe, Justine S. Liepkalns, Casey J. Self and Jennifer H. Doherty

Published online 30 May 2019 in Wiley Online Library | DOI: 10.1002/bmb.21257

On the cover: Designing a metro map as a concept map to allow students to have an overview of different nucleotide metabolic pathways as well as their integration. Cover image credit to Lee et al. in this issue.

 Online version of this article contains Supporting Information.





A Modular Laboratory Course Using Planarians to Study Genes Involved in Tissue Regeneration (pages 547–559)
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 Published online 13 June 2019 in Wiley Online Library | DOI: 10.1002/bmb.21259

Sustainable Individualized Instruction of Biochemistry: A Framework for Recruiting, Training, and Utilizing Undergraduate Teaching Assistants (pages 560–564)
Ahmed M. Ahmed and Jim Blankenship
 Published online 12 June 2019 in Wiley Online Library | DOI: 10.1002/bmb.21278

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Angela K. Stoeckman, Yingqi Cai and Kent D. Chapman
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Anqi Yang, Sarah Stockwell and Lisa McDonnell
 Published online 21 June 2019 in Wiley Online Library | DOI: 10.1002/bmb.21282

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 Published online 29 May 2019 in Wiley Online Library | DOI: 10.1002/bmb.21258

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Psychology

Volume 89

Part 3

September 2019

Special Issue: Performance Assessment of Student Learning in Higher Education
Guest edited by Olga Zlatkin-Troitschanskaia and Richard J. Shavelson

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- 550 Developing a performance assessment task in the Finnish higher education context: Conceptual and empirical insights
Heidi Hyttinen and Auli Toom

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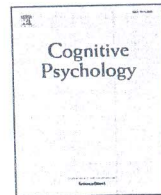
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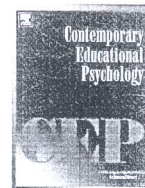


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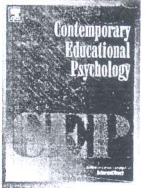
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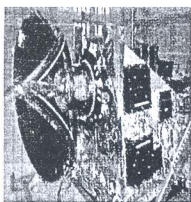
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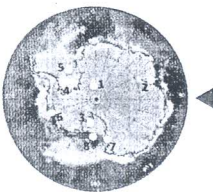
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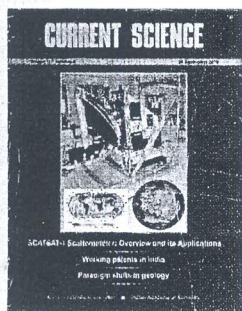
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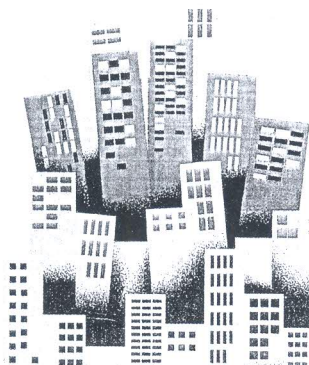
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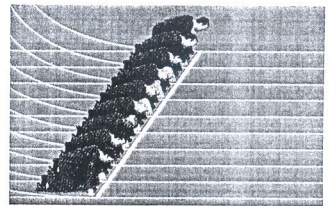
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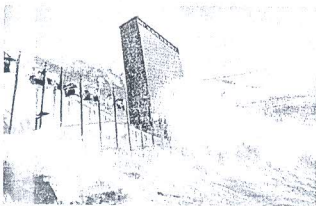
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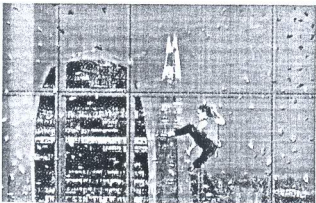
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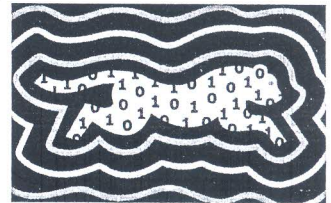
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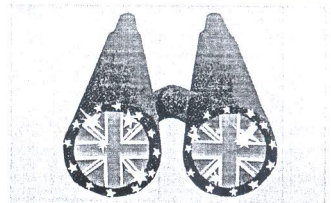
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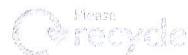
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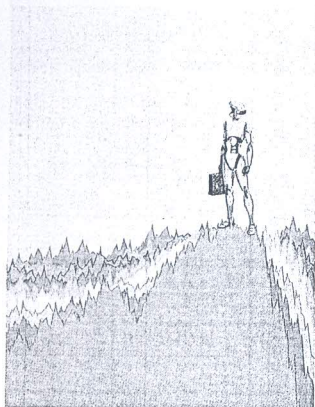
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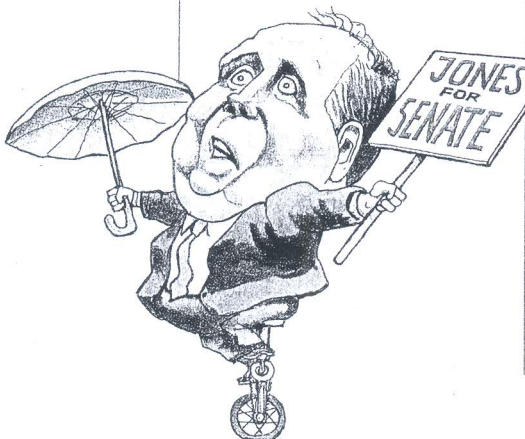
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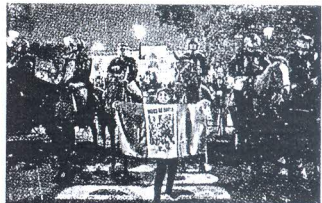
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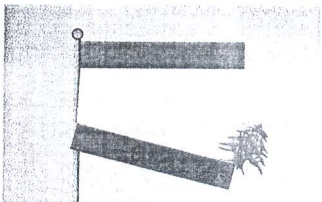
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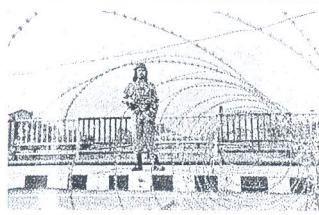
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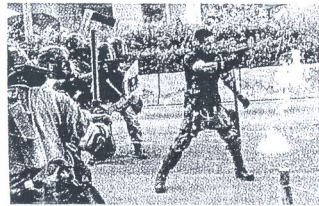
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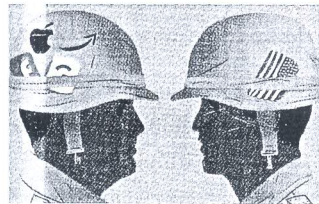
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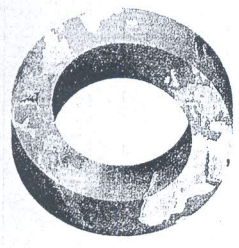
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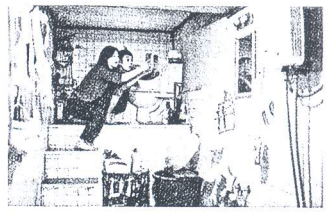


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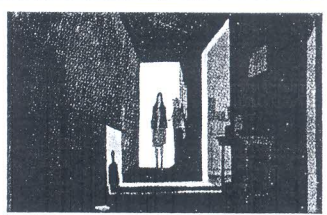
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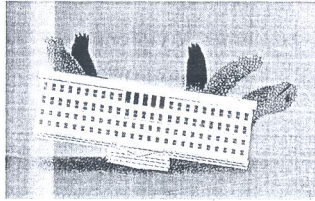
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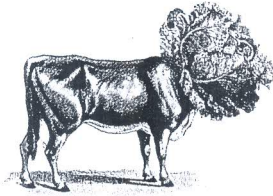
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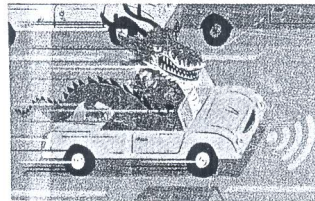
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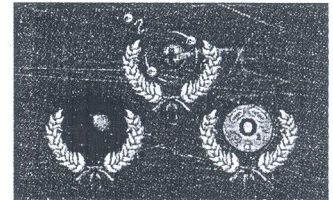
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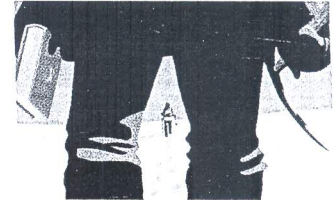
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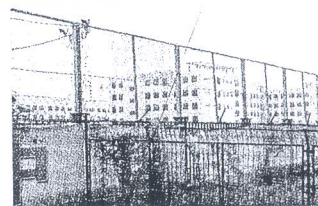
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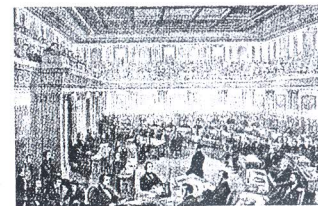
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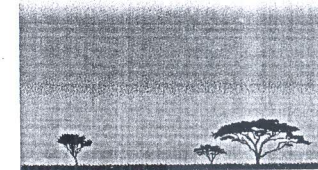
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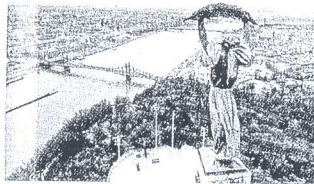


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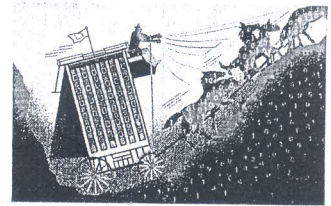
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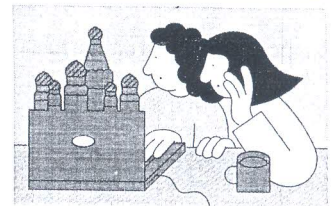
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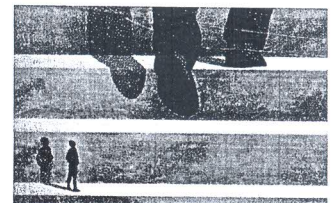
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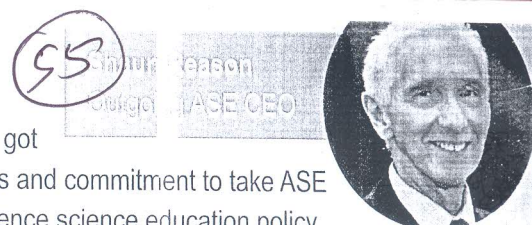
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**The Association
for Science Education**
Promoting Excellence In Science Teaching and Learning

Editorial



By the time that you read this I will have retired after five and a half years at ASE. It has been a great privilege to lead this organisation and work with so many talented and committed people, all of whom share ASE's commitment to promote excellence in the teaching and learning of science.

When I arrived in 2014, the Association was facing financial uncertainty. We needed to get things right internally. We set ourselves a simple stepped strategy of 'Survival – Consolidation – Growth'. I am enormously proud of the staff, members and Trustees who have taken the changes we have made over the years in their stride, whilst working often well beyond that expected. I'm delighted to report that our strategy was successful and ASE is once again strong, both educationally and financially. The Association is poised for further growth and development and can look to the future with confidence.

It was therefore the right time for me to pass on the baton to someone who can take ASE to the next stage. I am delighted that Hannah Russell has been appointed as my successor.

Welcome to September EIS and to the new school year!

I'm delighted to have joined ASE as Chief Executive. It's a privilege to be part of such a well-loved organisation, with a mission so close to my heart. Having originally trained as a school science teacher and worked in STEM education for most of my career, I'm thrilled to have the opportunity to lead and help to shape the future of the Association.

I'm very grateful for the warm welcome I have received from staff, committee members and Trustees, and have been hugely impressed with the passion and commitment shown by all these groups and across our volunteer community. My very best wishes to Shaun in his retirement. He has led the Association through a period of significant change and left a highly respected, sustainable organisation, with a talented and dedicated team.

I'm also excited about the opportunities ahead. We are all familiar with the challenges facing science teaching; in addition to recruitment, retention and access to high quality subject-specific continuing professional development, school funding remains in crisis, while technical education pathways, practical science and careers guidance for young people present both challenges and opportunities. What is assured is that ASE remains committed to promoting

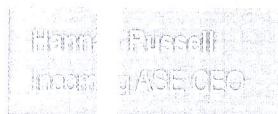
She has clearly got the energy, skills and commitment to take ASE forward, to influence science education policy and to raise ASE's profile: a great appointment. Hannah will certainly have Trustee Body, staff and member support to help her achieve her goals.

One of the most inspiring things about my time at ASE has been the supportive and 'family' atmosphere of our community. I am immensely grateful to all of you for the help and inspirational ideas you have given me and the organisation. To those members who are teachers and technicians, I particularly thank you for your continued dedication to the profession, whilst dealing with shrinking budgets and limited access to resources. The long hours and energy you put in for the sake of your students is commendable and greatly appreciated.

I look forward to seeing all the great work that I know ASE will do in the years to come. Thank you again for all your help and support.

Shaun Reason, Outgoing ASE Chief Executive.

excellence in science education and supporting our community wherever needed to achieve this.



My priorities as Chief Executive will be to continue to support our members, broaden our reach across the community and build on our strengths, raising our profile and demonstrating our value to ensure that we are a powerful voice for science education and the 'go to' place for those working in our sector. We can't do this alone and will continue to explore opportunities for strategic collaboration across and beyond STEM.

I look forward to meeting many of our members over the next few months and hope to see as many of you as possible at our Annual Conference at Reading University in January 2020.

Hannah Russell, Incoming ASE Chief Executive.

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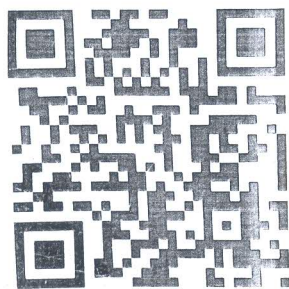
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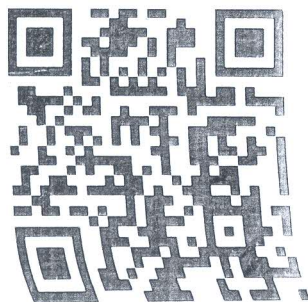
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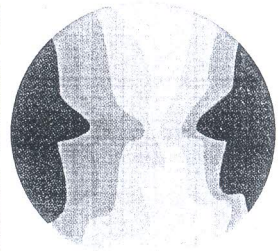
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**Individual Differences in First and Second Language
Ultimate Attainment and Their Causes**
Ewa Dąbrowska and Sible Andringa
Editors

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AMI VITALE

EMBARK

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Cat vs. Bird: The Battle Lines

To save birds, should we kill off cats? A cat- and bird-lover seeks a better solution.
BY NOAH STRYCKER

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First Photo in the Wild of Largest Bee

See a Wallace's giant bee roughly life-size.

PHOTOGRAPH BY CLAY BOLT

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Weakening Life's Green Foundation

Hundreds of the plant species that anchor Earth's ecosystems have disappeared.

BY MICHAEL GRESHKO

DECODER

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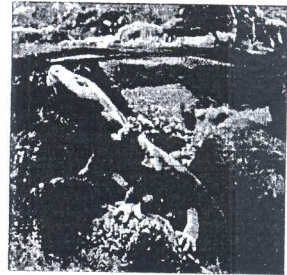
Lines to lobster and crab traps harm right whales, but there are safer alternatives.

BY JASON TREAT

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Fragile Life in Freshwater

Many species that live in freshwater are endangered. A photographer is racing to document them before it's too late.

PHOTOGRAPHS BY DAVID HERASIMTSCHUK



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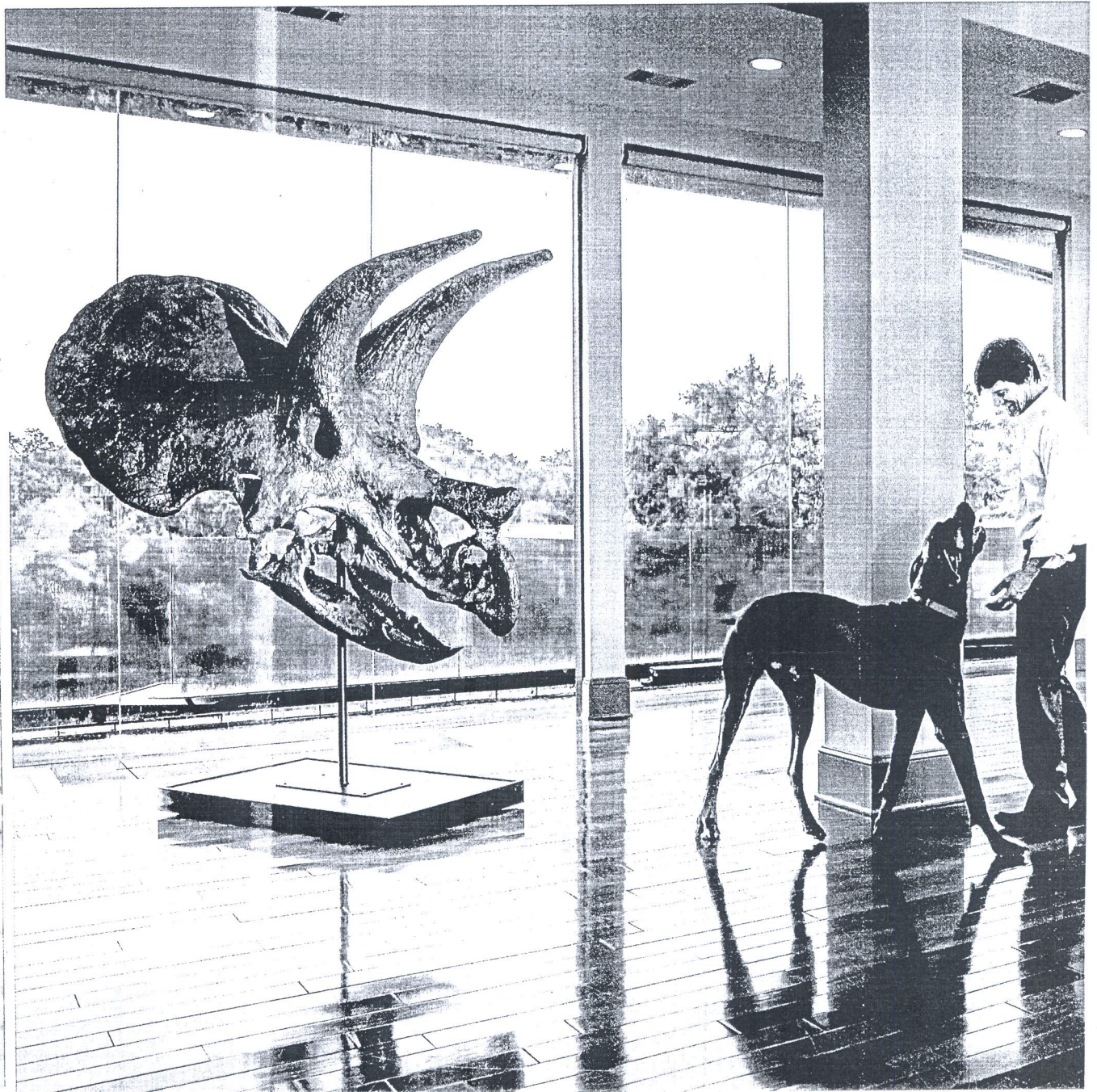
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The last mass extinction was caused by an asteroid. The blame for the next one lies much closer to home—with us. Soon all that’s left of some of the planet’s most vulnerable species may be the photographs of animals collected in Joel Sartore’s Photo Ark.
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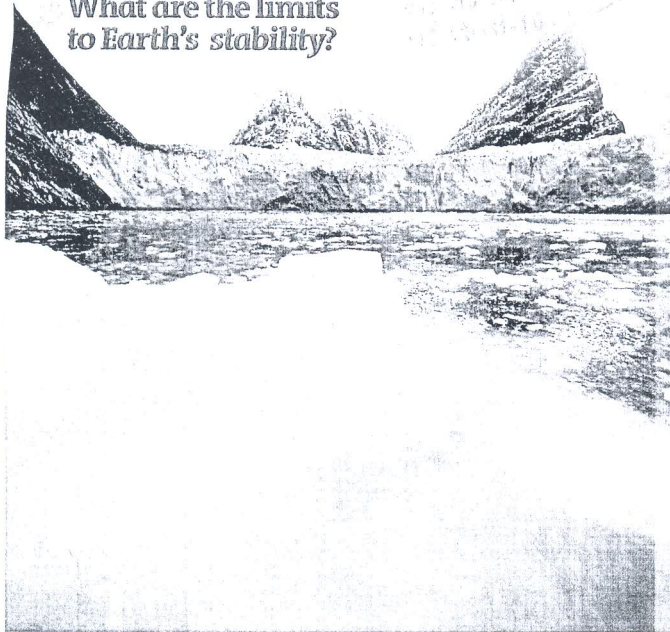
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JASON EDWARDS/NATIONAL GEOGRAPHIC IMAGE COLLECTION

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Come and join us at New Scientist Live

THERE are only four weeks to go until New Scientist Live, our blockbuster four-day science and technology show. If you haven't been before, do come and join us!

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Emily Wilson Editor

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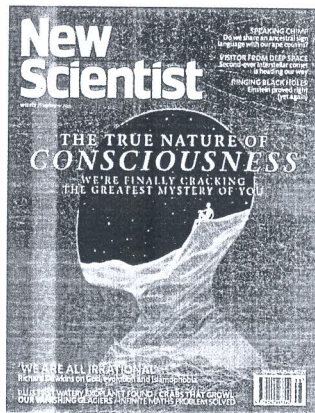


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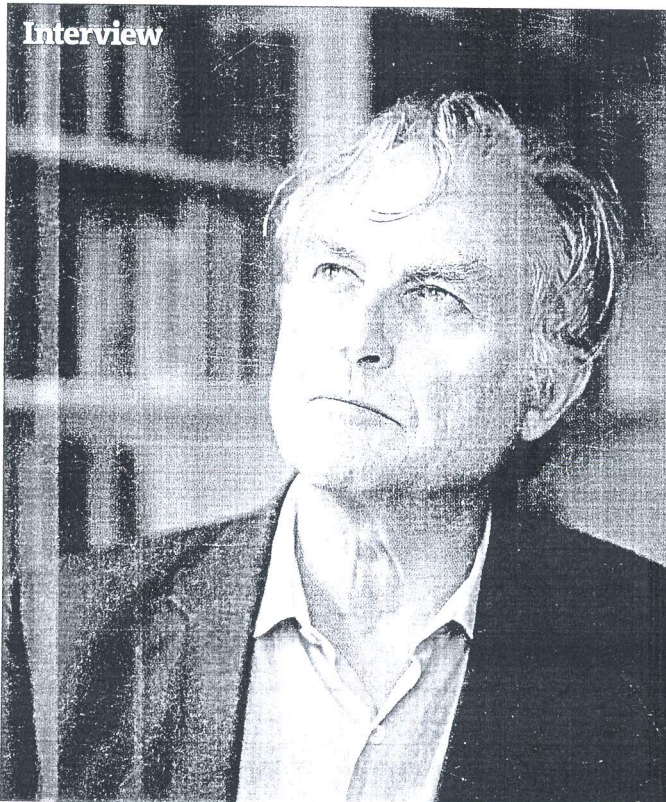
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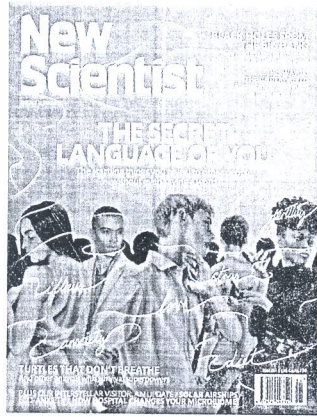
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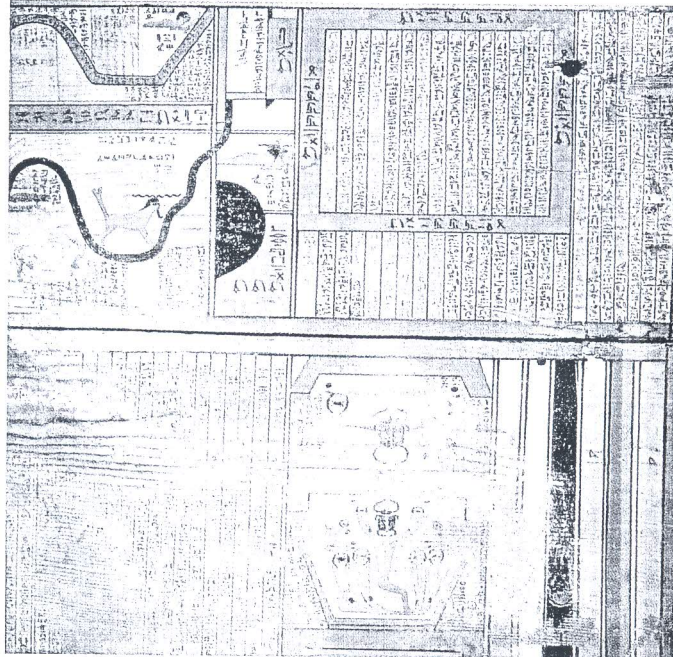
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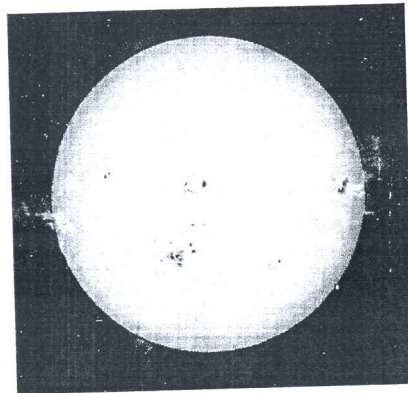
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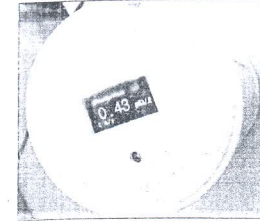
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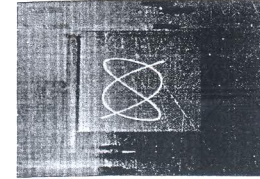
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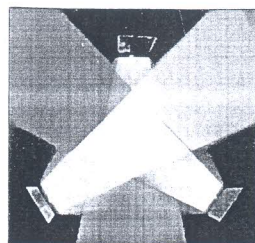
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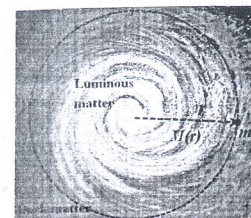


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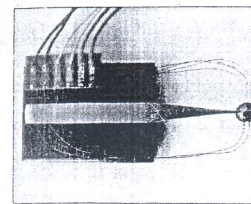


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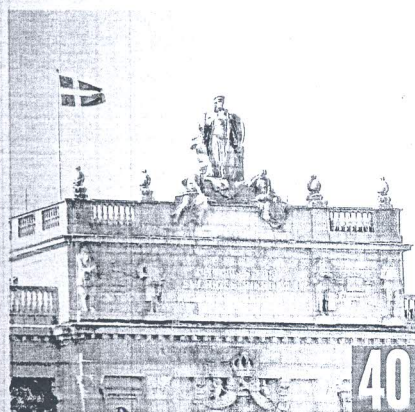


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32 The stormy fluid dynamics of the living cell

Daniel Needleman and Michael Shelley

The flows inside cells are intricate and often counterintuitive. Measurements, models, and simulations are helping to unravel the complexities.

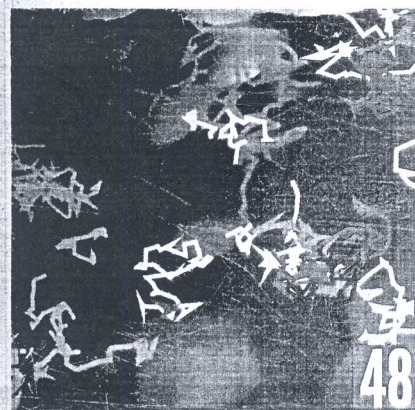


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40 The end of the Swedish bomb

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Early in the Cold War, Sweden's leaders planned to acquire nuclear weapons. By the 1960s the country was an international leader of the disarmament movement.



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48 Contact interactions in biological systems

Diego Krapf and Ralf Metzler

The motion underlying contact interactions that are vital for biology has farther-reaching implications than previously thought.



ON THE COVER: Computer scientist Manohar Vanga generated this image from a photograph by iteratively adjusting the colors of a pixel's neighbors via a random walk in color space. Random walks are the crucial ingredient in a new study that brings physical intuition to a perplexing mathematical problem. To learn more, turn to the news story that begins on **page 18**. (Image courtesy of Manohar Vanga, Max Planck Institute for Software Systems.)

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Radiation forensics

In fall 2017 air monitors across Europe detected a plume of radioactive ruthenium. To this day no one has accepted responsibility for the radionuclide's release. PHYSICS TODAY's Andrew Grant details a recent study implicating a nuclear facility in Russia that was producing a radioactive source for a neutrino experiment. physicstoday.org/Sep2019a

ARGONNE NATIONAL LABORATORY



X-ray source upgrade

The US Department of Energy has approved an \$815 million upgrade to its Advanced Photon Source user facility outside Chicago. PHYSICS TODAY's Alex Lopatka describes the improvements that will allow for x-ray beamlines that are between 100 and 1000 times as bright as those currently in use. physicstoday.org/Sep2019b

VLADIMIR SHILTSEV



Vodka 101

Bottles of Russian Standard vodka claim that its 40/60 mixture of alcohol and water was devised by Dmitri Mendeleev, who created the periodic table 150 years ago. Physicist Vladimir Shiltsev debunks that myth and lays out the facts about vodka and Mendeleev's research on the topic. physicstoday.org/Sep2019c

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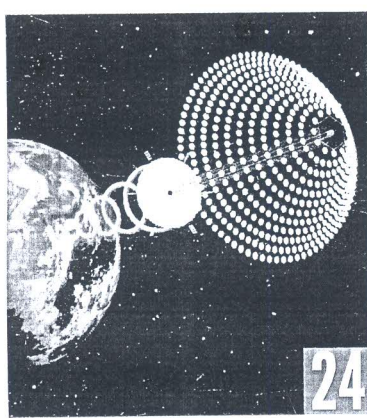
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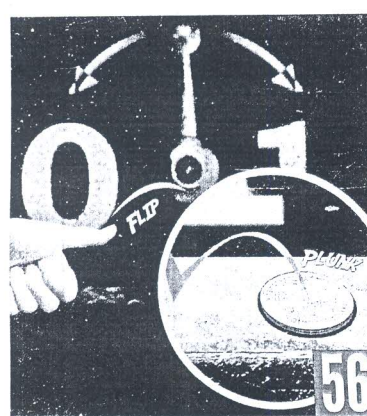


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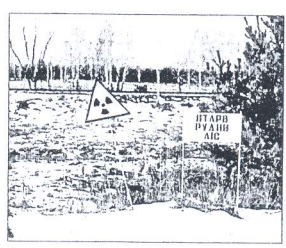
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Multimedia

Check out the *Physics World Weekly* podcast of 15 August for more about the impact of radiation on the Chernobyl area

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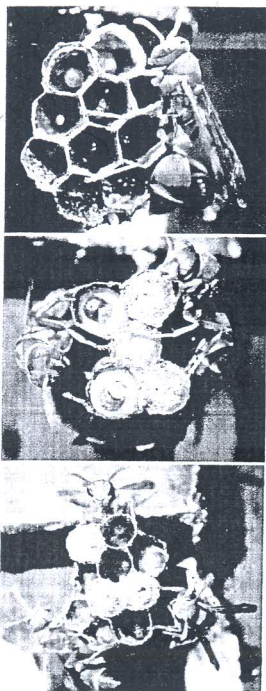
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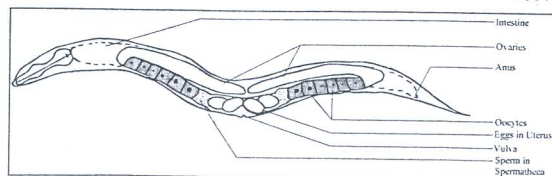
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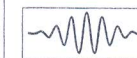
The image on the front cover represents the partial connections of the *C elegans* worm. The pink circles represent amphid sensory neurons and blue circles represent interneurons. All known connections are represented.

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Sydney Brenner (1927–2019)
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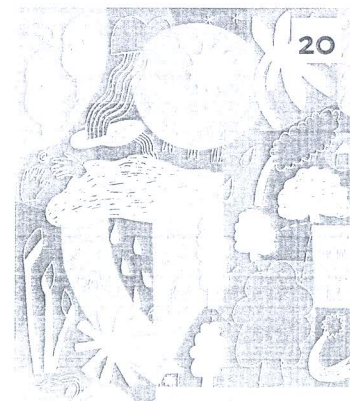
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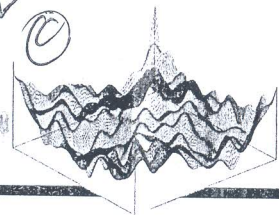
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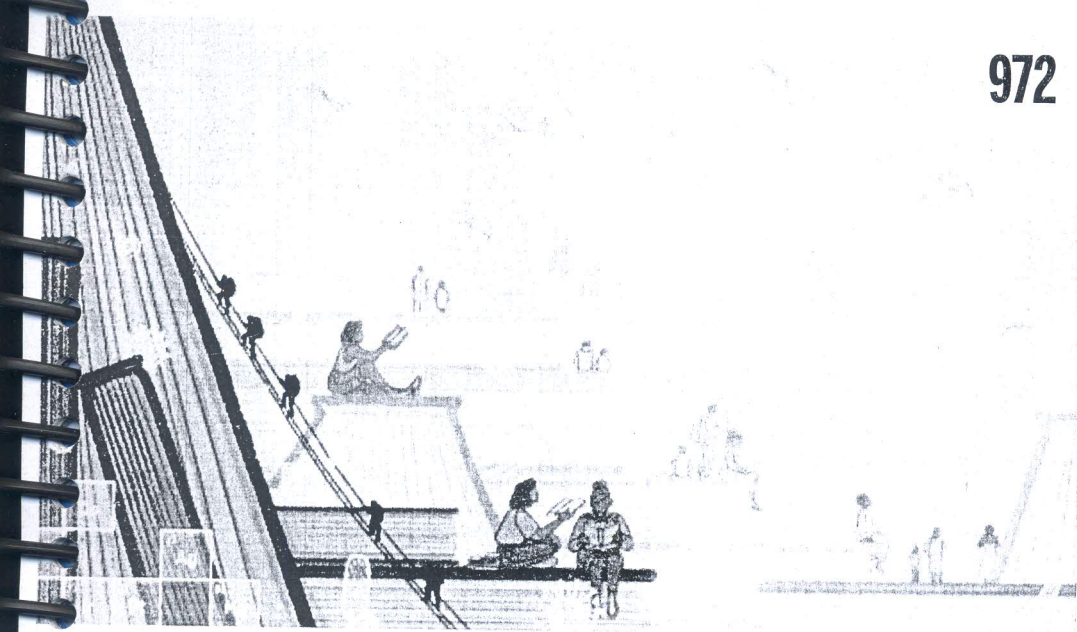
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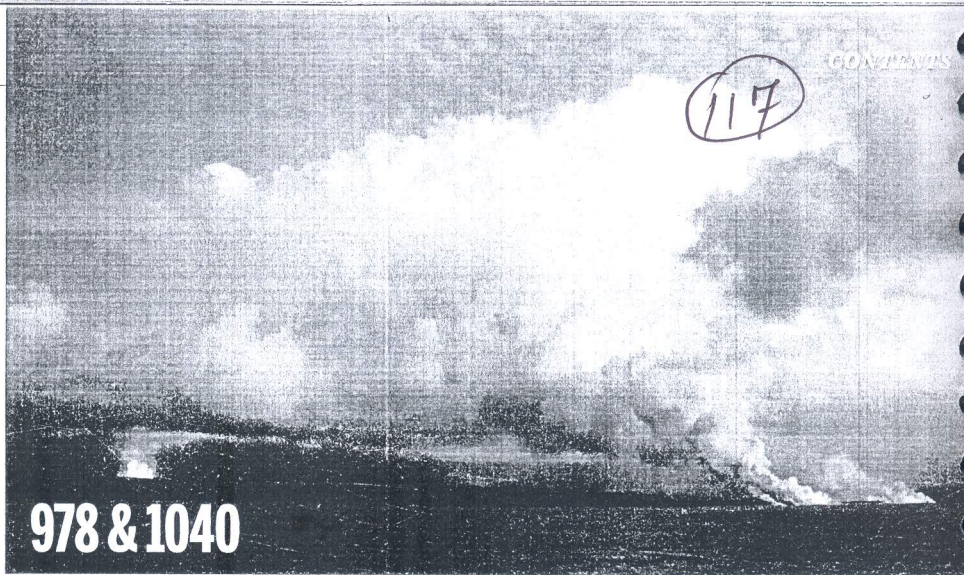
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In the Red Sea, a branching *Acropora* coral spawns pink egg-and-sperm bundles. These bundles will be carried by the currents until they encounter a match—a sperm fertilizes an egg and new life is created. Coral spawning usually occurs once a year in a certain month, on a specific night, and at a particular hour, but environmental changes are disrupting this synchronized event. See pages 987 and 1002. *Photo: Tom Shlesinger*

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Runoff water rushes through the valley below El Altar, Ecuador's fifth-tallest volcano. The Ecuadorian Andes were the cradle of mountain science, pioneered by Alexander von Humboldt.

Two centuries on, mountain research continues to build on Humboldt's foundations, with key relevance for human society in the era of rapid climate change. See page 1092. *Photo: Ryan Heffernan/Cavan Images*

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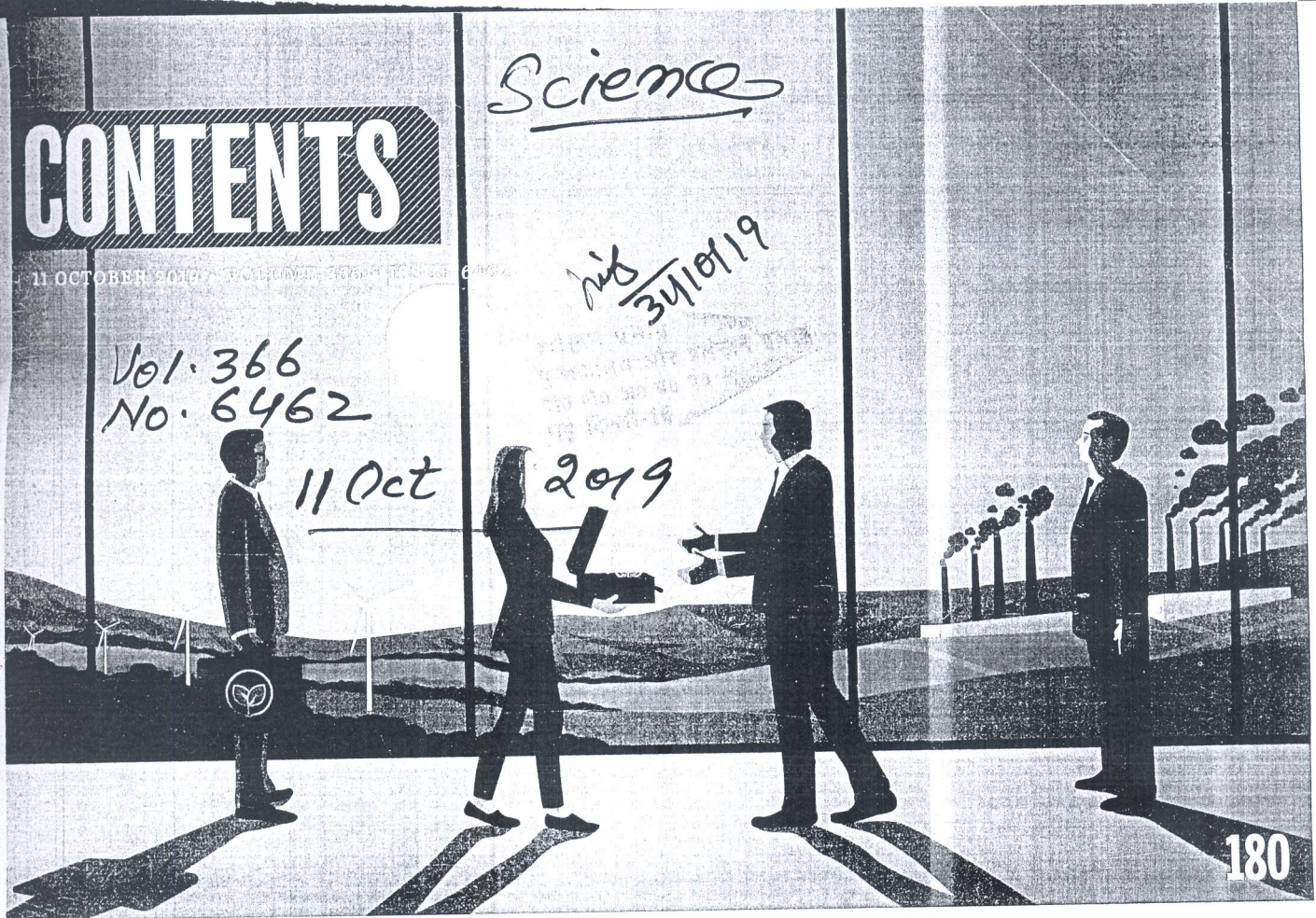
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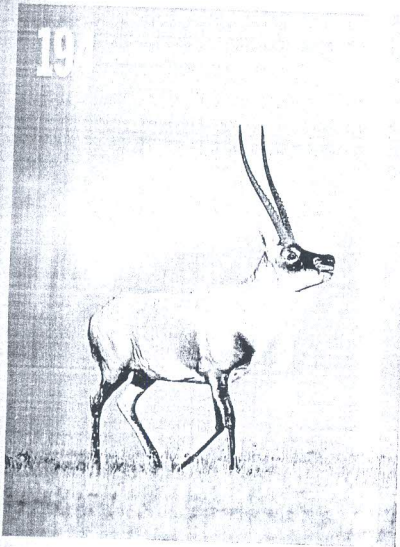


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with warm ocean currents to speed ice loss from Helheim and other glaciers draining Greenland's ice sheet. See page 170. Photo: Adam LeWinter, U.S. Army Engineer Research and Development Center (ERDC) Cold Regions Research & Engineering Laboratory, Remote Sensing/GIS Center of Expertise

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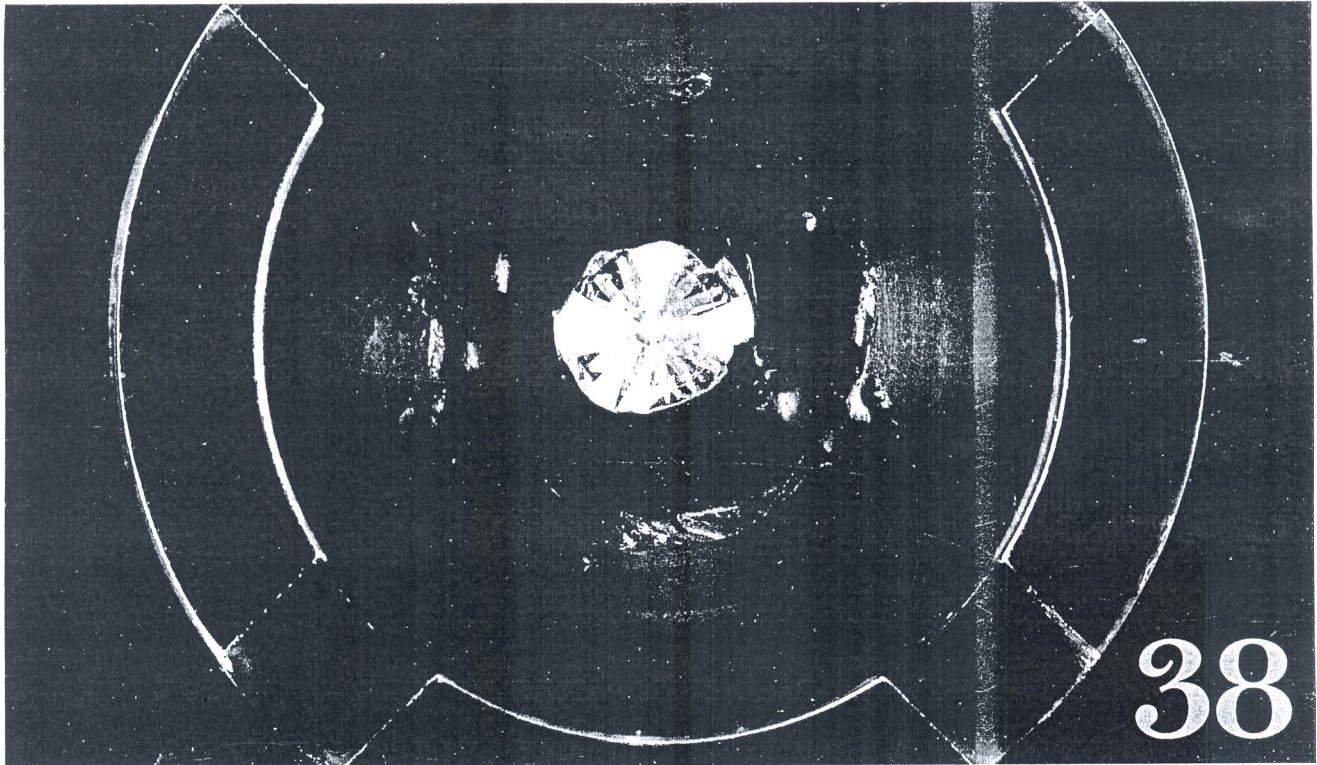
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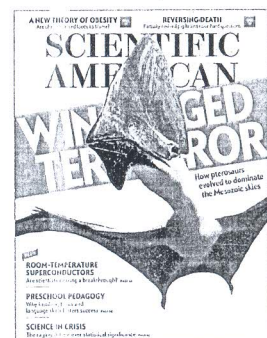
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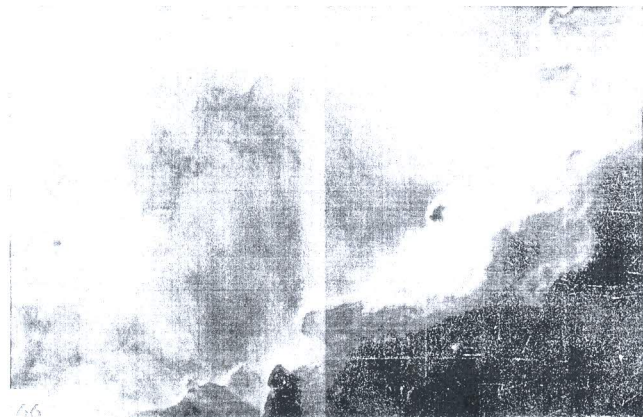
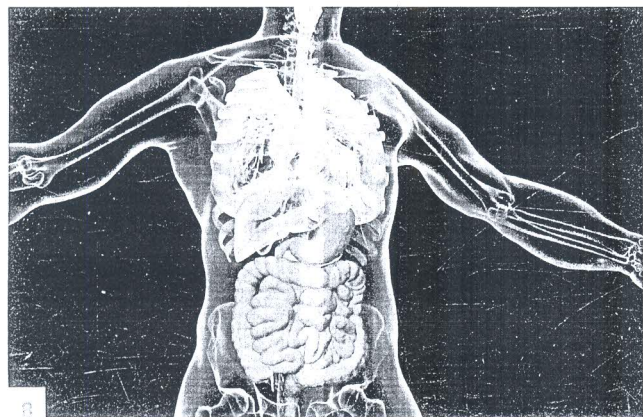
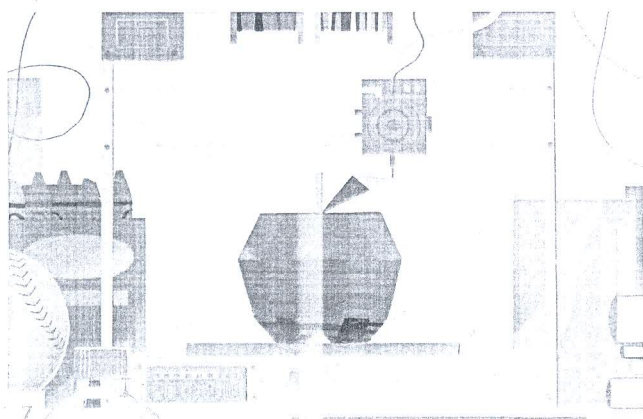


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the influence of modernism
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Changing Paradigm of Teaching-Learning in the Age of Knowledge and Innovation

P B Sharma* and Sanjay Vij**

"My message, especially to young people is to have courage to think differently, courage to invent, to travel the unexpected path, courage to discover the impossible and to conquer the problems and succeed. These are great qualities that they must work towards. This is my message to the young people."

— A.P.J. Abdul Kalam

We are in an era of digitisation and things have changed a lot from the earlier times. For instance, various services and facilities are available to us on click. Similarly, the changes brought about by the technology are visible in the education sector too. Till last century, the education system in India was the traditional classroom-based learning, where students didn't get opportunity to participate actively in the teaching – learning process. This led to the development of the concept of digital learning which evolved in around 2002-03. However, certain factors like gaps and lack of implementation within the system are leading to the failure of quality utilization of this digital access. Thus, we as educationists need to work towards removing such barriers and ensuring that we do justice to the coming generations. Providing our students with the best quality of education should always be our priority, especially in an age wherein knowledge and innovations are becoming central to the teaching – learning process. But what is education in its true sense? The word education has been defined differently by many eminent personalities. For instance, Mahatma Gandhi defined education as "all round drawing out of the best in the child and man – body, mind and spirit" while Tagore defined education as, "which makes one's life in harmony with all existence and thus enables the mind to find the ultimate truth which gives us the wealth of inner light and significance of life". For Swami Vivekananda, "the education is the manifestation of perfection already in men". He thought it a pity that the existing system of education did not enable a person to stand on his own feet, nor did it teach him self-confidence and self-respect. To Vivekananda, education was not only collection of information, but something more meaningful; he felt education should be man-making; life giving and character-building. For the thinkers of east, the education was more of an enlightenment and manifestation of inner light. The thinkers of the West in early times also voiced a number of opinions about education. For instance, Aristotle viewed education as "paying emphasis in all round balanced development and the creation of a sound mind in a sound body". Thus to him the aim of education was the welfare of the individuals so as to bring happiness in their lives. Education philosophy gradually started to change from oriental to occidental and later after industrial revolution, education

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To Commemorate
150th Birth Anniversary of Mahatma Gandhi
and
Centenary Year Celebrations of Gujarat Vidyapith

Celebrating 90 Years of University News

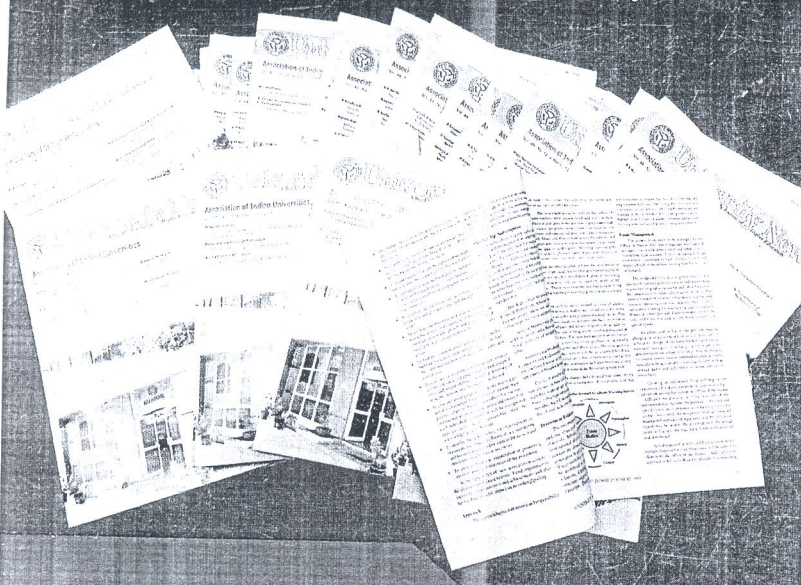


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