

## FUTURE OF THE PHYSICAL REVIEW

The Physical Review is still growing, to the point where its size already impedes its usefulness to many subscribers. We are convinced that an important function of the journals is to render a service to our members. The division into Sections A and B has not done so, as shown by the fact that it has not produced an increase in member subscriptions. We suggest therefore a further split into four or five divisions. The journal itself will be recombined into one unit, but members, and members only, will be permitted to subscribe to one or more portions of the journal. The number of divisions can be altered and their contents redistributed when future changes in physics require this. Our initial proposal calls for five divisions according to subject matter (details refer to the new Physical Review subject index shown on page 288):

- a. Physics of Atoms and Molecules, Fluids, and Miscellaneous Topics. (Primary index classifications 20, 30, and 10.)
- b. and c. Physics of Solids. (Primary index classification 40.) Because of its size this part will have to be split into two sections. Those interested will most likely want both sections, so that the precise point of division is not very important.
- d. Physics of Nuclei. (Primary index classification 50.)
- e. Physics of Elementary Particles and Fields. (Primary index classification 60.)

Each of these sections will be issued once a month and every subscriber will receive a monthly author and subject index to the combined journal, which will be numbered as one volume per month. A cumulative index will appear every six months. Each section will contain approximately 300 pages per month. We expect most members to want two sections. Preliminary estimates show that the first section will cost between \$10 and \$12, each additional section about \$8, and a member subscription to

the complete journal between \$32 and \$35 per year, roughly the cost of four sections. Authors will be asked to indicate the principal subject classification of their paper, thus determining the section in which they wish it to appear.

We believe that this scheme will make the journal more acceptable to the individual research worker and hence increase the total number of member subscribers. The intention is, however, solely to help the user of the journal; the financial status of our Society is essentially independent of the number of member subscriptions. The rates are more likely to result in a small loss than in a profit for our treasury.

A lengthy study by the editors and the editorial staff has indicated that the proposed plan is the most practical scheme among several considered so far. An often suggested plan is to publish only Abstracts and have subscribers select only those individual articles of which they want the complete text. This is equivalent to splitting The Physical Review into 40 different journals with a different list of subscribers every week! In spite of this extreme complexity such a scheme has been tried by others. It failed because the subscribers did not use it. In fact we cannot believe that each one of ten or twenty thousand physicists will decide every week which few articles out of a list of forty he wants to read in full. With our proposal, he needs to make a much easier decision only once a year.

Our proposal may also prevent the appearance of several narrowly specialized splinter journals as is happening in other sciences. Such journals are an expensive burden for libraries, while only a very small fraction of a society's membership subscribes.

The alternative is to let The Physical Review become a purely archival journal, available primarily in libraries and having only a small number of individual subscribers. It has been stated that journals are no longer the principal means of communication in physics but that preprints, topical meetings, travel, and telephone

calls are used to spread the news. We believe, however, that such methods reach only a small self-styled "elite" and that the journals can cover a very much larger community of interested colleagues.

The Editors would like to see the five-way split go into effect in 1966. This is possible only if we can be certain that it will benefit our membership. It is of course simpler and financially safer to do nothing. We request therefore that you discuss this problem with colleagues and that you let us know your opinion on whether the proposed plan is good, bad, or indifferent. You can write to us, or if you prefer, to your favorite Council member. But please limit your remarks to this problem only.

We know that this sort of sounding is fallible: The division into Sections A and B has not produced an increase in the number of member subscriptions, whereas the advance poll made us expect a substantial rise. However we wish to get some guidance from those most interested, our readers.

S. A. Goudsmit

THE PHYSICAL REVIEW ANALYTICAL  
SUBJECT INDEX FOR 1965

**10 General**

- 11 Constants, Standards, and Units
- 12 Instrumentation and Methods
- 13 Mathematical Methods
- 14 Classical Mechanics and Acoustics (see also 41.2 and 43.1)
- 15 Electromagnetism (see also 63.4, 64.4, and 65.3)
  - 15.5 Electromagnetic Waves (see also 24 and 42.4)
- 16 Relativity and Gravitation
- 17 General Quantum Mechanics
- 18 Thermodynamics and Statistical Physics (see also 41.5)
  - 18.5 Irreversible, Transport, and Stochastic Processes (see also 43)
- 19 Related Fields
  - 19.2 Astrophysics and Geophysics (see also 16 and 61)
  - 19.4 Biophysics and Chemical Physics

**20 Atoms and Molecules**

- 21 Atomic Structure and Spectra (see also 42.3 and 62)
  - 21.2 Atomic Structure Theory
  - 21.4 Fine and Hyperfine Spectra (see also 51.4)
- 22 Molecular Structure and Spectra (see also 42.3 and 62)
  - 23.5 Involving Ions and Electrons
- 24 Stimulated Emission; Lasers and Masers (see also 15.5 and 42.3)
- 25 Atomic and Molecular Polarization and Resonance (see also 44)

**30 Fluids**

- 31 General Theory of Fluids
- 32 Gases: Structure, Properties, and Dynamics (see also 18 and 35.5)
- 33 Liquids: Structure, Properties, and Dynamics (see also 18)
- 34 Liquid and Solid Helium (see also 31)
- 35 Plasma Physics (see also 41.4)
  - 35.5 Gas Discharges (see also 23)

**40 Solids**

- 41 Crystalline and Electronic Structure and Dynamics (see also 46.1, 47.1, and 48.1)
  - 41.1 Structure and Symmetries; Diffraction
  - 41.2 Lattice Dynamics
  - 41.3 Electron States: Band Structure
  - 41.4 Collective Effects (see also 48.6)
  - 41.5 Static Thermal and Mechanical Properties (see also 18)
- 42 Dielectric, Magnetic, and Optical Properties (see also 46.2, 47.2, and 48.2)
  - 42.1 Electric and Magnetic Susceptibilities and Polarizations
  - 42.2 Spectra of Ions in Solids
  - 42.3 Optical Emission and Absorption (see also 21, 22, and 24)
  - 42.4 Optical Propagation and Properties
- 43 Transport Effects (see also 18.5, 46.3, 47.3, and 48.3)
  - 43.1 Acoustical Propagation
  - 43.2 Thermal Conduction
  - 43.3 Electrical Conduction
  - 43.4 Magneto-Transport Effects
- 44 Nuclear and Electronic Resonance (see also 25, 46.4, 47.4, 48.4, and 51.4)
  - 44.1 Nuclear Resonance
  - 44.2 Paramagnetic Resonance
  - 44.3 Ferri-, Ferro-, and Antiferromagnetic Resonance
- 45 Imperfections and Impurities; Alloys (see also 4.65, 46.7, 47.5, and 48.5)
  - 45.1 Defects and Dislocations
  - 45.2 Radiation Damage
  - 45.3 Impurities
  - 45.4 Atomic Diffusion and Mobility (see also 18.5)
  - 45.5 Alloys
- 46 Metals and Semimetals (see also 48)
  - 46.1 Crystalline and Electronic Structure and Dynamics (see also 41)
  - 46.2 Dielectric, Magnetic, and Optical Properties (see also 42)
  - 46.3 Transport Effects (see also 43)
  - 46.4 Nuclear and Electronic Resonance (see also 44)
  - 46.5 Imperfections and Impurities; Alloys (see also 45)

- 46.6 Superconductivity
- 46.7 Superconducting Alloys
- 47 Insulators and Semiconductors (see also 48)
  - 47.1 Crystalline and Electronic Structure and Dynamics (see also 41)
  - 47.2 Dielectric, Magnetic, and Optical Properties (see also 42)
  - 47.3 Transport Effects (see also 43)
  - 47.4 Nuclear and Electronic Resonance (see also 44)
  - 47.5 Imperfections and Impurities (see also 45)
  - 47.6 Color Centers
- 48 Ferroelectrics and Magnetic Materials
  - 48.1 Crystalline and Electronic Structure and Dynamics (see also 41)
  - 48.2 Dielectric, Magnetic, and Optical Properties (see also 42)
  - 48.3 Transport Effects (see also 43)
  - 48.4 Nuclear and Electronic Resonance (see also 44)
  - 48.5 Imperfections and Impurities; Alloys (see also 45)
  - 48.6 Long-Range Order
- 49 Special Topics
  - 49.1 Surfaces, Interfaces, and Films
  - 49.2 Electron and Ion Emission from Solids
  - 49.3 Recoilless Absorption and  $\gamma$ -Ray Emission
  - 49.4 Positron Annihilation (see also 62)
  - 49.5 Range and Energy Loss (see also 23, 54, and 55)

**50 Nuclei**

- 51 Properties
  - 51.2 Mass and Abundance
  - 51.4 Moments and Spin (see also 21.4 and 44.1)
- 52 Nuclear Spectroscopy (Decay, Energy Levels, and Transitions)
  - 52.2 —of Nuclei with  $A < 20$
  - 52.4 —of Nuclei with  $20 \leq A < 90$
  - 52.6 —of Nuclei with  $A \geq 90$
- 53 Nuclear Structure Theory
  - 53.2 Nuclear Models
  - 53.4 Many-Particle Theories (see also 31)
- 54 Nuclear Reactions and Scattering (of Elementary Particles)
  - 54.1 —of Photons
  - 54.2 —of Leptons
  - 54.3 —of Mesons and Hyperons
  - 54.4 —of Nucleons and Antinucleons by Nucleons
  - 54.5 —of Protons and Antiprotons by Nuclei with  $A < 20$
  - 54.6 —of Protons and Antiprotons by Nuclei with  $A \geq 20$
  - 54.7 —of Neutrons and Antineutrons by Nuclei with  $A < 20$
  - 54.8 —of Neutrons and Antineutrons by Nuclei with  $A \geq 20$
- 55 Nuclear Reactions and Scattering (of Nuclei)
  - 55.2 —of Deuterons and Tritons
  - 55.4 —of  $\text{He}^3$  and  $\text{He}^4$  ( $\alpha$ )
  - 55.6 —of Heavy Nuclei
- 56 Nuclear Fission

**60 Elementary Particles and Fields**

- 61 Cosmic Rays (see also 19.2)
- 62 Positronium, Muonium, and Mesonic Atoms and Molecules (see also 49.4)
- 63 Interactions and Properties (Experimental)
  - 63.2 Weak
  - 63.4 Electromagnetic
  - 63.6 Strong (see also 54)
- 64 Interactions and Properties (Theoretical)
  - 64.2 Weak
  - 64.4 Electromagnetic
  - 64.6 Strong (General)
  - 64.7 Strong (Baryon No. = 0)
  - 64.8 Strong (Baryon No. = 1)
  - 64.9 Strong (Baryon No. = 2)
- 65 Scattering Theory, Field Theory, and Symmetries
  - 65.1 Scattering Theory (General)
  - 65.2 Scattering Theory (Asymptotic Behavior with Energy)
  - 65.3 Field Theory (see also 15 and 16)
  - 65.4 Symmetries (General)
  - 65.5 Symmetries (Relating to Specific Particles or Interactions)

**70 Errata**