

be almost as many Negroes in each of the other regions. Negro migration from the South has been selective for the better educated. However, the educational level of Negroes outside the South is lowered by migration because the migrants are not as well educated as nonsouthern Negroes.

Actual depopulation is occurring over large areas in the United States. In approximately 100 counties there are more deaths than births, and there are counties in which depopulation has so reduced the taxes available that mandated obligations cannot be met. The great agricultural and mining interior of the country will continue to lose population to the metropolitan centers of the Atlantic, Pacific, and Gulf coasts, and the Great Lakes region.

The concentration of Negro population in small areas near the heart of our largest cities is extraordinary. Nevertheless, there is a clear pattern of increasing social status as distance from the center of the city increases, an ecological pattern similar to the traditional one of whites. The concentration of Negroes and other poorly educated peoples in the city presents a unique opportunity for the efficient development of human resources. Whereas the Negro has demonstrated his ability to swing metropolitan, and perhaps national, elections, there is in the long run a limitation to Negro political power implicit in the high urban concentration. Under a federal system, Negro voters can influence relatively few elections to state legislatures or to the United States House of Representatives. The burden of developing human resources is increasingly placed upon the cities without compensating aid from state or national governments.

This session was sponsored by the Population Association of America and the American Sociological Association.

EVERETT S. LEE, *Program Officer*

## History and Philosophy of Science (L)

The economics symposium (26 Dec.) was useful and moderately attended. The symposia on 27 December were both excellent, highly stimulating, and well attended by both philosophers and scientists. The quality of the major papers at the cosmology and cosmogony symposium was truly first-rate, but the attendance was disappointingly low, considering that it

was an all-AAAS symposium and that a sizeable ballroom had been reserved for this session. The Sunday afternoon (29 Dec.) vice-presidential address was very well attended, and judging by the numerous comments and requests for copies of it, was very well received. The Sunday evening session was attended adequately and stimulated a great deal of discussion from the floor. President T. Keith Glennan's reception and cocktail party for Section L at his home was sponsored by the department of humanities and social sciences at Case Institute of Technology and proved to be a well-attended social event. It was a catalyst of much follow-up discussion of the earlier sessions. While the Monday session (30 Dec.) was of high quality, attendance was only moderate. However, the evening session, also of high quality, was well attended. I have the overall, definite impression that, although attendance was decimated by conflicts with meetings being held by other professional societies simultaneously in other cities, the sessions served a very useful purpose and that valuable publications will result from them.

ADOLF GRÜNBAUM, *Vice President*

## Engineering (M)

The interface between science and engineering is a very hazy boundary line, according to the three participants in the panel discussion jointly sponsored by the AAAS and the American Society for Metals (27 Dec.). Today, the two disciplines are moving closer and closer together, and many engineers now strive to attain research-oriented doctor's degrees. Resulting conflicts of authority can only be resolved by assigning definite responsibilities to workers in the appropriate area (H. K. Work). However, strong bands of interdependence will always remain, and will result in crossover between the two fields.

This crossover of knowledge is needed, according to E. A. Trabant. In the past, it resulted in major advances. Practical power generators developed from electrical theory, while thermodynamics theory arose from the pioneer work of engineers. And today, solid state physicists, electronic engineers, and metallurgists work together to devise better, more versatile transistors.

Bringing the discussion to a close, R. J. Raudebaugh noted that such co-

operation was implicit in the educational background of scientists and engineers—student engineers study scientific principles broadly and deeply, learning to apply them in a practical manner, while future scientists work with engineering equipment in their research. Engineering and science, according to Raudebaugh, should be closely related, working hand in hand to help society grow.

CARL R. WEYMUELLER,  
*Associate Editor, Metal Progress*

## Pharmaceutical Sciences (Np)

Section Np held eight sessions which included 23 contributed papers and two symposia. Nine of the contributed papers were in the area of hospital pharmacy. Herbert L. Flack and Charles M. King discussed the need for a formal course in administrative principles for the hospital pharmacist and went into detailed description of course content. Louis P. Jeffrey emphasized that hospital pharmacists should be actively engaged in research and development and that over a period of approximately 10 years there has been little increase in the amount of research being conducted by hospital pharmacists. Discussants of this paper appear to agree wholeheartedly with Jeffrey and many felt that it was essential that the hospital pharmacists make their contributions to pharmaceutical research.

Don E. Francke presented the vice-presidential address entitled "International pharmaceutical abstracts—origins and objectives." Beginning in January 1964, the American Society of Hospital Pharmacists will publish *International Pharmaceutical Abstracts*. The abstract journal will be published in English, 24 times a year, and indexed cumulatively twice annually. Initial plans call for at least 6000 abstracts annually and the index will strive to bring out the pharmaceutical implications of the articles abstracted.

The first symposium entitled "Teaching responsibility of the hospital pharmacist" was held on 27 December. Clifton J. Latiolais (Ohio State University) served as presiding officer and papers were presented by Sister M. Gonzales (Mercy Hospital, Pittsburgh), Paul J. Pierpaoli and Milton W. Skolaut (National Institutes of Health), John A. Autian (University of Texas), and Henry J. Derewicz and Daniel H. Yeoman (Touro Infirmary,

# Science

## History and Philosophy of Science (L)

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