In Romania It’s the Méthode Babes-Papanicolaou

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First I wish to thank the International Academy of Cytology (IAC) for honoring me with the Masubuchi Life-Time Achievement in Clinical Cytology Award. This award implies that my activities in clinical cytology have taken place over many years, and, indeed, they have: 45 to be exact. My receiving this award also implies that these activities have been of sufficient merit to be considered worthy of the award, and, of course, this gives me great pleasure and great satisfaction. And not only am I most grateful to receive the award because of the honor it brings, but I consider myself extremely fortunate because it gives me the opportunity to address the academy on a subject of my own choosing.

To begin with, I shall show you photographs of two men. Each of these men made published contributions to cytopathology. In the first photograph almost all of you will recognize Dr. George Papanicolaou, the founder of modern cytopathology (Figure 1). The next is a portrait of the late Dr. Aurel A. Babes (Figure 2), the Ro-
These were followed in 1928 by a major article by Dr. Babeş in *Presse Médicale*, the French general medical journal (Figure 5), titled “Diagnostic du Cancer du Col Utérin par les Frottis”3 (“Diagnosis of Cancer of the Uterine Cervix by Means of Smears”). It contained an accurate description of cells of squamous cell carcinoma in cervical smears. The cells were obtained by using a platinum loop to transfer material from the cervix to the slides, which were then air dried and stained with Giemsa stain. This article was Dr. Babeş only major contribution to cytopathology. He published an article in 1931 on superficial squamous cell carcinoma of the cervix, but it made only passing reference to the smear method of diagnosis.4 Babeş’s contribution to cytopathology seemed not to have taken root, and his contribution was practically forgotten. Before he died, in 1961, he was given credit in Europe,5-7 South America8 and the United States, where J. E. Ayre referred to him...
in his 1951 atlas, *Cancer Cytology of the Uterus*. However, Babeş’ work seems to have been unknown to Dr. Papanicolaou.

**Contributions of Dr. Papanicolaou to Cervicovaginal Cytology**

Dr. Papanicolaou presented his finding of cancer cells in vaginal aspirates in January 1928 at the Third Race Betterment Conference in Battle Creek, Michigan, a city about 180 km east of Chicago. The conference met in the Battle Creek Sanitarium (Figure 6), now the Battle Creek Federal Center. (Why the Battle Creek Sanitarium? Dr. John Harvey Kellogg, developer of Kellogg’s cornflakes and co-founder of the world-famous cereal company, was the physician-in-chief at the Sanitarium, where people came from far and wide to experience his philosophy of preventive medicine, or “biologic living.”) The subsequently published article on Dr. Papanicolaou’s findings, which was of modest length, remained in obscurity because it was published in the proceedings of the conference rather
Dr. Papanicolaou then abandoned for quite a while the subject of the cytologic diagnosis of uterine cancer. After about almost 10 years, however, at the suggestion of the chairman of the Department of Anatomy at Cornell University in New York City, the department to which Dr. Papanicolaou belonged, he took it up again, and in 1941 he published, with Dr. Herbert Traut, an article in the *American Journal of Obstetrics and Gynecology* titled, “The Diagnostic Value of Vaginal Smears in Carcinoma of the Uterus”11 (Figure 7). This article was followed two years later by their epic monograph *Diagnosis of Uterine Cancer by the Vaginal Smear*12 (Figure 8), with its magnificent drawings of cells and tissues (Figure 9). These two publications of Papanicolaou and Traut marked the beginning of the modern era of cytopathology.

**American Journal of Obstetrics and Gynecology**

*Vol. 42 August, 1941 No. 2*

**Original Communications**

*THE DIAGNOSTIC VALUE OF VAGINAL SMears IN CARCINOMA OF THE UTERUS*†

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Figure 7 Cover with the title of the article by Drs. Papanicolaou and Traut published in the *American Journal of Obstetrics and Gynecology* in 1941.

**Drs. Babeş and Papanicolaou: Their International Recognition**

Although Dr. Babeş article of 1928 in *Presse Médicale* was referred to in the Italian medical literature13,14 before the year was over, it seems to have remained in obscurity until the early 1950s, when, with the international surge of interest in cytopathology, it was “discovered.” By then, however, it had been eclipsed by the numerous publications on the subject by Dr. Papanicolaou and his colleagues. It should be noted that neither Dr. Babeş nor the Italian authors had any thought of screening symptomless women; indeed such an idea seemed revolutionary even when it was introduced 20 years later.

Why did Dr. Babeş publication of 1928 attract so little attention? Having been published in a general
The Babeş Family

Much is known about the life and work of Dr. Papanicolaou,16 In contrast, relatively little has been published about the life of Dr. Aurel Babeş, yet one cannot but remark on certain shared aspects of their lives. They were born in the same part of the world: Dr. Babeş in Romania, Dr. Papanicolaou in Greece. They were from upper-middle-class families: Dr. Papanicolaou was the son of a physician, Dr. Babeş the son of a professor of chemistry. However, we do know the genealogic background of Dr. Babeş, well illustrated by his family tree, which was given to me in Bucharest by his nephew, Dr. Vincent Babeş. At the top of the tree was Vichentie Babeş, a man of apparently high position, judging from his rather elaborate clothes (Figure 10). He was a judge and had nine children, with four of his five sons becoming scientists, lawyers or physicians. One of them, whose name was also Aurel, was the father of Dr.

medical journal in the French language, it would not have reached the much wider audience in the vast English-speaking world. In contrast, Drs. Papanicolaou and Traut published in the American Journal of Obstetrics and Gynecology in the United States in English at a time when this was about to become the lingua franca of the international medical and scientific communities. Furthermore, the population of the United States was rapidly becoming more cancer conscious, and gynecologists there were quick to recognize the potential of Dr. Papanicolaou’s observations. The American Cancer Society was also quick to recognize the tremendous value of Dr. Papanicolaou’s observations15 and gave him the financial support to pursue his research in cytopathology right up to the time of his death, in 1962. He was thus able to publish his research in books and numerous articles.

Figure 9  Drawing of cells and a biopsy specimen of cervical squamous cell carcinoma in the 1943 monograph by Papanicolaou and Traut.

Figure 10  Judge Vichentie Babeş, grandfather of Dr. Aurel A. Babeş.
Babeș (Figure 11); he became a professor of chemistry, Professor Aurel V. Babeș. One cannot discuss the Babeș family without mentioning that one of Judge Babeș’s nine children was Dr. Victor Babeș (Figure 12), professor of pathology at the universities of Bucharest and Budapest and uncle of our Dr. Babeș; he became an internationally renowned medical scientist, especially in the fields of microbiology and infectious diseases. If you consult a medical dictionary and look up the name Babeș, you will find about 14 entries that incorporate his name, probably the most familiar being the disease babesiosis. It was Dr. Victor Babeș who discovered the etiologic agent of this disease.

**Dr. Babeș: His Scholarly Achievements**

I have digressed briefly from Dr. Aurel A. Babeș to illustrate that he was blessed with the genetic background that would equip him to carry out scholarly medical work. Did Dr. Aurel Babeș fulfill his genetic promise? He certainly did. Time prevents me from mentioning more than a few of his scholarly accomplishments; instead, I shall mention only a sample of them to give you an idea of his ability, his diversity of interests and his achievements.

In 1915 Dr. Babeș graduated *magna cum laude* from medical school at the University of Bucharest. His graduation thesis on cerebrospinal fluid won awards from both the Faculty of Medicine and the Romanian Academy. In 1921 he became senior assistant to Professor Constantin Daniel, head of the gynecology clinic of Coltea Hospital, in the center of Bucharest (Figure 13). There he began the collabo-

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*Figure 11*  Dr. Aurel V. Babeș, father of Dr. Aurel A. Babeș and professor of chemistry, University of Bucharest.

*Figure 12*  Bust of Dr. Victor Babeș, uncle of Dr. Aurel A. Babeș, on the grounds of the medical school of the University of Bucharest.
ration with Professor Daniel that resulted in the two above-mentioned publications on gynecologic cytology of 1927. But prior to these publications on cytology Dr. Babeş had published, for example, “Study of Fine Morphology of Negri Corpuscles” and “The Diagnosis of Epidemic Typhus by Means of the Weil-Félix Reaction with Proteus X19,” for which he received another award from the Romanian Academy. He collaborated subsequently with his uncle, Dr. Victor Babeş and his father, Professor Aurel V. Babeş, and together they wrote a treatise on the disease pellagra (Figure 14). He also wrote a text on general anatomic pathology (Figure 15), and toward the end of his career he authored, with Drs. Parhon and Petrea, a book on endocrinology of the salivary glands (Figure 16). He also published works on gynecologic pathology, syphilis, tuberculosis, epidemic typhus and the pathology of the experimental approach to cancer.

This is only a small selection of his publications, but it illustrates the breadth of his interests and his scholarly accomplishments. It also shows the diversity of his interests, which should help us understand why he did not have any more publications on cytopathology. In all, Dr. Babeş published 283 scientific articles and books in Romania and abroad. Many of his studies were translated into foreign languages and were well known and often quoted in the medical literature of his time. Because of his important original contributions, Dr. Babeş was elected member of numerous foreign medical associations and worked with such famous pathologists as Wegelin, Lubarsch and Meyer in Germany. For his scientific contributions, Dr. Aurel A. Babeş will remain one of the most distinguished representatives of Romanian medical scholarship, well recognized beyond the boundaries of his country.

Our Visit to Bucharest

Fortified with some of this information, in Decem-

Figure 13  Coltea Hospital, in the center of Bucharest, where Dr. Babeş began his collaboration with Professor Daniel, head of the gynecology clinic.

Figure 14  Title page of a treatise on pellagra authored by Drs. Victor Babeş, Aurel V. Babeş and Aurel A. Babeş.
November 2000 a team of four met in Bucharest, the capital of Romania, to see where Dr. Babeș had lived and worked and to speak to any of his former colleagues. All the members of the team are here today: Dr. Evangelia Bartziota, a cytopathologist from Greece who knows Romania well and who speaks Romanian fluently; Dr. Volker Schneider, secretary-general of the IAC, who is from Germany; Dr. Luminita Tasca, a senior pathologist in Bucharest; and myself (Figure 17).
After visiting the medical school (Figure 18), we visited the famous Dr. Victor Babeș Institute, which opened in 1899 (Figure 19). This institute was named after Dr. Babeș’ uncle, Dr. Victor Babeș, who became a medical hero in Romania, as depicted in Figure 20. The institute was built expressly to enable him to carry out his research and routine investigations. Our Dr. Babeș also worked in the institute.

After visiting the institute, we went to the diplomatic quarter of Bucharest, where Dr. Babeș had built the house shown in Figure 21. He and his wife, Lucia-Maria, also a pathologist, lived in this architecturally interesting house, but after the country became communist they were forced to live in only one room of the house because of restrictions on the amount of living space people were allowed to occupy. The rest of the house was occupied by communist officials.
This was followed by a visit to the C. I. Parhon Institute of Endocrinology, named after a former director, where Dr. Babeş spent the last nine years of his professional life. Despite its rather rundown appearance (Figure 22), it still remains an important hospital and research center for endocrinologic diseases.

Finally, we visited Serban Voda Cemetery (Figure 23), a huge and crowded cemetery situated near the center of Bucharest. On one side of the entrance were flower sellers (Figure 24); on the other side was something much more practical: coffins for sale (Figure 25). We visited the grave of Dr. Babeş, who died in 1961; there his bones and those of his wife are interred (Figure 26). (Other persons whose names on the gravestone are not Babeş are not relatives of the Babeş family. Because of space limitations at the cemetery, a grave that is not completely filled and that will accommodate more bodies is made available for unrelated people, who may even wish to make a reservation for themselves.)

Apart from being able to visit with Dr. Vincent Babeş, the nephew of our Dr. Babeş, we could not find any other person in Bucharest who had known or worked with him—a big disappointment. His nephew, a retired virologist, described him as a reserved and pleasant man. That is about all he remembered since he was then just a young man about to begin his studies at the university. However, on returning to the United States I was extremely fortunate to be able to track down and visit one of Dr. Babeş’s former professional colleagues, Dr. Ion Petrea (Figure 27), who had worked with him at the Institute of Endocrinology in Bucharest for the last nine years of Dr. Babeş’s life. (In 1970, Dr. and Mrs.
Petrea left Romania for the United States to take a position at Yale University medical school. Now in retirement, they live close to Yale in a suburb of New Haven, Connecticut.

**Epilogue**

Almost 40 years ago, in a commemorative article, Dr. Petrea described Dr. Babeş as a “tireless physician, research worker and professor,” a warm and honorable man who pursued all of his professional activities “to his last day with passion, probity, and devotion, contributing with modesty, which was his characteristic feature, to the development of Romanian Science.” Dr. Petrea also assured me that Dr. Babeş knew of the great international reputation in cytopathology that Dr. Papanicolaou had gained in contrast to his own. However, Dr. Babeş

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**Figure 25** The other side, featuring more practical wares: coffins for sale.

**Figure 26** The grave of Dr. Babeş, where his bones and those of his wife are interred.

**Figure 27** Drs. Ion Petrea and Naylor outside the Medical Library of Yale University.
accepted his lack of recognition in the field without rancor; after all, he had a wealth of other scientific accomplishments. Furthermore, Dr. Babeş’s contribution to cytopathology has not been overlooked in Romania, his homeland, where, in a spirit of fairness and generosity, the Pap test is known as the Méthode Babeş-Papanicolaou.

This brings us to the end of our story. Again, I express my gratitude to the IAC for giving me this award. I also express my appreciation for the generosity of an esteemed physician, educator and former president of the academy, the late Dr. Kazumasa Masubuchi, who, shortly before he died, established the fund that made the award possible. And finally, on behalf of Drs. Bartziota, Schneider, Tasca and myself, I thank all of you here for having honored us with your presence.

Acknowledgments

We gratefully acknowledge the following for their contributions to the development of this article: Drs. Vincent Babeş, Larry E. Douglass, Paz Buenaventura Naylor, Ion Petrea and Daniel G. Remick.

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Keywords: cytology, babesiosis, Papanicolaou smear, cervix neoplasms, cervical smears, Papanicolaou, Babeş, Romania. (Acta Cytol 2002;46:1–12)