

Comments on "The Worst of Both Worlds: Poverty and Politics in the Balkans"

Valerie J. Brown's article (*1*) delivers further evidence that the United States is very far from Central Europe. The Balkans, as it is taught even in elementary schools in Europe, is a well-defined geographic area, including Romania, Bulgaria, the former Yugoslav Republics, Albania, and Greece. Its northern boundary is the Carpathian Mountains. Sometimes Turkey is also included because of its close political connections to the region. From historical aspects, the Balkans were traditionally the range of influence of the great powers, such as the Austro-Hungarian Monarchy, Russia, Italy, and the Ottoman and British Empires. The luxury of the insufficient knowledge on the geographic, ethnic, and cultural facts by the Western powers has caused irreparable damage and sorrow for the nations of this region up to now.

The recent conditions of the Balkan countries are determined by these historical and geographic factors. On a historical scale, the 40-year communist era was only a flash for the involved countries. Therefore, the arbitrary use of the term "Balkans" is not acceptable in an analysis of the roots of recent environmental and public health problems. Brown (*1*) wanted to evaluate the different consequences of communism, but obviously had difficulty selecting the target countries. Countries were also indicated as CEE (Central and Eastern European) states many times, which is confusing. We wish that Brown had compared the special problems of the former Eastern bloc regions [the Balkans and the Visegrad countries (Czech Republic, Slovakia, Poland, Hungary, and the former Soviet republics)]. It would have been a very interesting and encouraging paper.

Thus we request that another article be written to provide a thorough analysis of the health situation of the Balkan countries, perhaps by a local expert.

**Csaba Varga
István Ember**

Department of Preventive Medicine,
University of Pécs
Pécs, Hungary

REFERENCES AND NOTES

1. Brown VJ. Focus: The worst of both worlds: poverty and politics in the Balkans. *Environ Health Perspect* 107:A606-613 (1999).

Brown's Response: Difficulties with "the Balkans"

My assignment was to write an overview of "environmental health in the Balkans." I soon discovered that defining the term "Balkans" was fraught with difficulties. In my background research I found little agreement as to which countries constitute the Balkans. In fact, current references to the region tend not to use the word at all. I decided to consider the following countries as belonging to the Balkans for the purposes of my article: Albania, Bosnia-Herzegovina, Bulgaria, Croatia, Hungary, Former Yugoslav Republic of Macedonia, Romania, Slovenia, and Yugoslavia (consisting of Serbia, Kosovo, and Montenegro). This decision was by no means "arbitrary," as Varga and Ember allege. They should note that the major difference between their list and mine is that I included Hungary while they included Greece. My reasoning was as follows. The broad geographic area in question has been a crossroads of population movements since time immemorial, and the number of religions, cultures, nation-states, and political systems found there is bewildering. The salient historical forces operating in the region have been the Austro-Hungarian Empire, the Ottoman Empire, and the communist system. Although Varga and Ember state that "On a historical scale, the 40-year communist era was only a flash for the involved countries," it would be impossible to omit that period from any discussion of health issues in the region. My article is not a history but a discussion of current conditions. Moreover, the countries behind the Iron Curtain do not fit the standard typology of developed versus developing countries, in which the former are industrialized and have market economies and the latter lack these characteristics. The former Iron Curtain countries are hybrids (that is, industrialized but lacking market economies), and this status is a consequence of communism. I omitted Greece because it is not a hybrid, being industrialized and having a market economy, and was not isolated from the rest of the world during the communist era.

The term "CEE" (Central and Eastern Europe) has emerged since the breakup of communism to describe those countries formerly behind the Iron Curtain. Varga and Ember criticize my use of the term as confusing, but it is difficult to avoid. Because I was not able to travel to each country in the region and collect locally the most reliable statistical information, I was forced to rely on data from international institutions, primarily the European Environment Agency's Dobris Assessment (*1*) and several World

Health Organization sources. These sources contain detailed health information on their member states and group them by geographic region. They do not identify the Balkans as such, but include them in the CEE countries. What is even more frustrating is that, although the Balkan countries are listed in these groupings, there are actually very little data from them in the statistical records. Most of the information is from the more northerly countries such as Poland and the Czech Republic. Thus, I was forced to make generalizations about the Balkan countries based on the available information for the CEE region as a whole. I did make this clear early in the article.

I agree completely with the comments of Varga and Ember that the Western powers have caused "irreparable damage and sorrow for the nations of this region," and that "America is very far from Central Europe." While I was working on the article, I discovered that most people with whom I discussed it casually were quite ignorant of the region, even though the U.S. involvement in the war in Kosovo had occurred only a month or two earlier. I can only hope that my article, however incomplete, served to dispel some of the widespread ignorance of the region. Finally, I hope to see an increase in media coverage of the region by people who actually live there as the political, cultural, and economic barriers between the Balkans and the rest of the world become less opaque.

Valerie J. Brown

Freelance Science Writer, *EHP*
Portland, Oregon
E-mail: vjane@teleport.com

REFERENCES AND NOTES

1. Stanners D, Bourdeau P, eds. Europe's Environment: The Dobris Assessment. Copenhagen:European Environment Agency, 1995.

Arsenic in Urine and Drinking Water

We found the article by Calderon et al., "Excretion of Arsenic in Urine as a Function of Exposure to Arsenic in Drinking Water" (*1*), to be interesting and informative. The study they reported provides some useful new information concerning the stability of urinary arsenic measurements over time. We were surprised, however, that the authors failed to cite the extensive amount of related work that has been conducted by the Arsenic Health Effects Research Program at the University of California, Berkeley. This includes a study published in 1994 concerning 36 adults in Nevada; the

study used a variety of arsenic exposure measures based on both water and urinary arsenic concentrations (2). We have also completed extensive studies in Chile involving approximately 200 study subjects in which we examined the relationship of both water and urine arsenic measurements to arsenic methylation patterns (3) and bladder cell micronuclei prevalence (4). The relationship of water arsenic intake measures with urinary arsenic concentrations (both with and without adjustment for creatinine) was also assessed in this population, and correlation coefficients between the different methods of arsenic exposure assessment have been reported (5). In addition, we conducted an intervention study involving 73 individuals who were given low arsenic water; we assessed urinary arsenic methylation patterns (6) and bladder cell micronuclei (7) in these individuals. Although Calderon et al. (1) provide some valuable additional knowledge to this field, we feel that readers would benefit by being made aware of these studies that were not cited in their paper.

Calderon et al. (1) state that "Previous studies have been inconsistent in methodologies used for the collection of urine samples." In our own studies, we have adhered to a consistent approach, the basis of which is to ensure that urine samples are collected in an identical manner from the groups being compared. In the studies mentioned above (2–7), we used first-of-the-morning samples to measure urinary arsenic, while in our current studies in India we use spot

samples taken during field trips to villages during the day. In all of these studies, sample collection is the same for those groups being compared; thus bias is not introduced into comparisons. Regarding precision, it is important to note that groups are being compared in epidemiologic investigations. Single spot urine samples give lower precision than 24-hr urine samples in assessing individuals, but a group average of many individual spot urine samples may give excellent precision. In any case, 24-hr samples are more expensive and difficult to collect, and they put a tremendous burden on study subjects. The difficulties associated with saving 24-hr urine samples likely leads to problems in compliance and thus errors in exposure assessment. In contrast, spot urine samples require little effort by the subject, and if collected properly, they will serve as a valid measure of group exposure. The key to this validity is to use the same procedures to collect samples from all subjects within the study.

Allan H. Smith
Craig M. Steinmaus

School of Public Health
University of California
Berkeley, California

E-mail: ahsmith@uclink4.berkeley.edu

REFERENCES AND NOTES

1. Calderon RL, Hudgens E, Le XC, Schreinemachers D, Thomas DJ. Excretion of arsenic in urine as a function of

exposure to arsenic in drinking water. *Environ Health Perspect* 107:663–667 (1999).

2. Warner ML, Moore LE, Smith MT, Kalman DA, Fanning E, Smith AH. Increased micronuclei in exfoliated bladder cells of individuals who chronically ingest arsenic-contaminated water in Nevada. *Cancer Epidemiol Biomark Prev* 3:583–590 (1994).
3. Hopenhayn-Rich C, Biggs ML, Smith AH, Kalman DA, Moore LE. Methylation study of a population environmentally exposed to arsenic in drinking water. *Environ Health Perspect* 104:620–628 (1996).
4. Moore LE, Smith AH, Hopenhayn-Rich C, Biggs ML, Kalman D, Smith MT. Micronuclei in exfoliated bladder cells among individuals chronically exposed to arsenic in drinking water. *Cancer Epidemiol Biomark Prev* 6:31–36 (1997).
5. Biggs ML, Kalman DA, Moore LE, Hopenhayn-Rich C, Smith MT, Smith AH. Relationship of urinary arsenic to intake estimates and a biomarker of effect, bladder cell micronuclei. *Mutat Res* 386:185–195 (1997).
6. Hopenhayn-Rich C, Biggs ML, Kalman DA, Moore LE, Smith AH. Arsenic methylation patterns before and after changing from high to lower concentrations of arsenic in drinking water. *Environ Health Perspect* 104:1200–1207 (1996).
7. Moore LE, Smith AH, Hopenhayn-Rich C, Biggs ML, Kalman DA, Smith MT. Decrease in bladder cell micronucleus prevalence after intervention to lower the concentration of arsenic in drinking water. *Cancer Epidemiol Biomark Prev* 6:1051–1056 (1997).

Corrections and Clarifications

In Table 2 of the letter "Human Exposure Estimates for Phthalates" [*EHP* 108:A440–A442 (2000)], the units in the title were incorrect; estimated exposures were measured in micrograms per kilogram per day instead of milligrams per kilogram per day. Also, the CERHR estimate for *n*-butyl benzyl phthalate (footnote ^c) is at the 81st percentile of calculated values, and not the 11th percentile.