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Indoors in the Good Old Days

Do you hanker for the “good old days” when life was simpler? No cars, no traffic, no cell phones, considerably fewer people, no pollution, and so on? How about transporting yourself back to the time frame of the Danish Iron Age (500 BC–700 AD)? Here are some interesting data from a recent paper by H. Skov *et al.*¹ They were able to determine levels of exposure of NO₂ and benzene in the Danish Iron Age and compare this exposure with present day levels.

Denmark Houses Studied

You're probably familiar with places that

have reconstructed houses from earlier periods. Williamsburg, VA, is a typical example of one of the many we have in the U. S. There are many in Europe, including Ballenberg in Switzerland; Szentendre, Hungary; and one near Riga, Latvia. Another has been constructed at the Historical-Archaeological Experimental Center in Lejre, Denmark. This comprises a small village of four living houses and eight workshops and outhouses from the Danish Iron Age.

Skov *et al.*¹ work reports on a pilot study where the indoor concentrations of NO₂ and the personal exposure of a woman living in one of the reconstructed houses were measured. Indoor concentrations of benzene were also measured one day during the test. The woman in the test had indoor activities most of the time, and was only outdoors between one and two hours daily amounting to about six percent of the time. One week average NO₂ levels (µg/m³) in the reconstructed house provided the following results: personal exposure 61.6, outdoors 9.9, at the fireplace 107.4, and at the bed 110.8. These values are at least a factor of two higher than on busy roads in Copenhagen, and also a factor two higher than the 95th percentile of the NO₂ exposure (about 26 µg/m³).

The concentration of benzene in the house (45.8 µg/m³) was about five times higher than on a busy road in Copenhagen and more than a factor of two higher than the exposure of people living and working in Copenhagen. The conclusion from this pilot study is “that people in the Iron Age were exposed to levels of indoor air pollution that must have affected their general health.”¹

What About Other Periods?

Instead of Denmark, perhaps you prefer to go back to ancient Greece or Rome. Well, you still wouldn't get away from pollution issues. Deforestation problems were already being discussed in Plato, while atmospheric and urban environment problems were present.² K. Karatzas notes,

“Solon, in the 6th century BC, ruled that blacksmith activities should be transferred outside the city of Athens in order to avoid noise and pollution. Vitruvius (75–26 BC) described city climates and climatic conditions in the Roman cities, to which an allusion on smoke pollution also appears in the poems of Horace (85–68 BC).”²

A study of crusts found in Arles and Bologna, which formed in the periods 1180–1636 and 1530–1887, respectively, provided evidence of past air pollution. P. Ausset *et al.* noted, “The same tracers were also encountered in the smoke from experimental wood fires. This approach confirms the presence of air polluted by wood combustion in the towns of southern France and northern Italy during the Medieval up to the pre-industrial age.”³

D. Kennedy has this to say about the good old days. “So often in the West we fool ourselves into believing that a return to a more elemental existence is a cure-all for our over-mortgaged lives. But when we envisage ourselves living in this ‘natural state,’ we superimpose our own social context onto the surroundings. His mud house becomes our architect-planned ethnic dwelling; his bedroll, a futon or a stripped pine bed. We filter out all that is bleak and grubby and imagine a state of nature that is pleasing to the eye. In short, we become tourists in his world, wanting what we assume to be this uncomplicated, free-flowing existence, but with all the creature comforts we have come to expect from living in a so-called developing nation.”⁴ As the above data show, earlier times certainly were not free of pollution.

Were Good Old Days Better?

Stephen J. Gould talks about Koko, the obsequious tailor promoted to public executioner in Gilbert and Sullivan's *MIKADO*, who maintains “a little list of society offenders who might well be underground,” and he means dead and buried, not romantically in hiding. “The most deserving character in Koko's compen-

dium, for he haunts all times and places, is 'the idiot who praises, with enthusiastic tone all centuries but this, and every country but his own.'"⁵ The good old days really weren't that good.

Finally, if you still want a taste of those "good old days," go live in a Third World country. The Danish house mentioned earlier provided only one-third the exposure ($150 \mu\text{g}/\text{m}^3$) of a typical woman living in rural areas in the Third World.⁶ Several World Health Organization (WHO) studies have shown that average daily indoor air pollution in developing countries is 1,000–2,000 percent or more above the recommended maximum threshold.⁷ An estimated 2.8 million people die annually because of indoor air pollution worldwide, mainly because of the burning of solid fuels (e.g., coal, wood and dung) for heating and cooking in the home in developing countries.⁸ *P&SF*

References

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