The final product, with extinction coefficient unaffected by further purification, was dissolved in water at a concentration of 50 mg/ml. PB, 20 mg were injected in rats as a bolus (see below), through a catheter previously inserted in the jugular vein. Male Wistar rats, 190–320 g b.wt, were used. Blood pressure and pulse rate were recorded via catheter in a carotid artery, using a P23 Db Statham pressure transducer. At the time of injection, the rats had recovered from the light ether anesthesia used for introduction of the catheter. The experiments were carried out on 7 animals, with an equal number as controls where 1 ml of 0.9% NaCl was injected. Blood, urine and feces were collected from all animals and examined for fluorescence in Wood's light and for the presence of PB. Most experiments were terminated 24 h after injection by i.v. air administration. Brain, heart, lung, liver, spleen and kidney were examined after sectioning and staining with hematoxylin and eosin.

Results. The i.v. administration of PB was well tolerated by all animals. During injection, and for a few minutes thereafter, a slight restlessness was observed, but no difference was noticeable between animals receiving PB or saline. Pulse rate and blood pressure, recorded for 24 h, showed no significant changes (figure 1). The urine samples passed within a few minutes and again several hours after injection of PB, were dark; the absorption spectra corresponded to PB. At 12 h after the injection of PB, urine had cleared (figure 2). Neither urine, feces, nor tissue showed any fluorescence under Wood's light. The microscopic examination showed no histologic change of brain, heart, lung, liver, spleen and kidney, as between animals given PB and controls.

Discussion. After i.v. administration of 20 mg PB to rats, blood pressure and heart rate remained stable, and the animals, after initial restlessness, were calm and could move freely. A transient darkening of the urine indicated PB excretion. The transit time of PB was less than 12 h. PB, with its rapid renal clearance, probably has little or no role in the symptomatology of those porphyrias of man in which nervous manifestations are prominent. The present results at least lend no support to this theory.

Pheromone XII. Männchenduftstoffe von Noctuiden (Lepidoptera)[1,2]

Male sex pheromones of noctuides

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Summary. By gaschromatographic-mass spectrometric methods 2-phenylethyl alcohol, benzylalcohol, phenylacetaldehyde and benzaldehyde were identified from scent brushes of male Noctuidae species (Lepidoptera).

Eine Vielzahl unterschiedlicher Arten männlicher Eulenfalter (Noctuidae, Lepidoptera) besitzt am zweiten, abdominalen Sternit einen paarigen Strahlhaarapparat mit Tasche, der einen starken Geruch verbreitet. Die damit ausgeschiedenen, flüchtigen Substanzen könnten bei der Kopulation der Insekten eine Bedeutung als männliches Sexualpheromon besitzen[3,4].

Wir haben die auf den Duftpinseln von Mamestra persicariae[5], Mamestra brassicae[5], Polia tincta und Agrocola helvola befindlichen flüchtigen Verbindungen untersucht. Dazu wurden jeweils 10 in Lichtfallen gefangenen Tieren die Duftpinsel herausgezogen, diese in 1 ml Hexan gegeben, die über den Haarpinsel stehende Lösung im Stickstoffstrom eingeengt und der Rückstand direkt mittels gekoppelter Kapillargaschromatographie-Massenspektroskopie analysiert. Die ungefähren Mengenverhältnisse erhält man durch Vergleiche der Peakflächen des Totalionenstrom-Chromatogramms. Bei den oben genannten Noctuidenarten fanden wir die im folgenden angeführten Verbindungen und Mengenverhälnisse:

Mamestra persicariae: 2-Phenyläthanol (**1**, 80%), Benzylalkohol (**2**, 3%), Phenylacetaldehyd (**3**, 15%), Benzaldehyd (**4**, 2%).

Mamestra brassicae: 2-Phenyläthanol (**1**, 96%), Benzylalkohol (**2**, 4%).

Polia tincta: 2-Phenyläthanol (**1**, 74%), Phenylacetaldehyd (**3**, 6%) und eine in ihrer Struktur noch nicht aufgeklärte Verbindung mit dem Molekulargewicht 164 (**5**, 20%).

Agrocola helvola: 2-Phenyläthanol (**1**, 100%).

Bedingungen für die Gaschromatographie: 20 m Glas-Dünnfilmkapillare OV 1, 0.25 mm i.D., 2 ml He/min. Bei Raumtemperatur splitlos injiziert, nach 2.5 min auf 80 °C, anschliessend 80–200 °C, 10 °C/min.

Retentionszeiten: 6.88 (**1**), 6.56 (**2**), 5.70 (**3**), 4.92 (**4**) und 9.90 (**5**) min.

Massenspektroskopie: Quadrupol-Massenspektrometer[6], 70 eV, Scanzeit 2.5 sec/Spektrum. m/e und relative Intensitäten (%):

2-Phenyläthanol (**1**)	39(55), 51(32), 65(54), 77(11), 91(100), 92(51), 122(15).
Benzylalkohol (**2**)	39(85), 51(100), 63(22), 65(19), 77(72), 79(90), 91(18), 107(25), 108(32).
Phenylacetaldehyd (**3**)	39(82), 51(29), 65(54), 91(100), 92(25), 120 (13).
Benzaldehyd (**4**)	39(40), 51(65), 77(100), 105(52), 106(60).
unbekannte Verbindung (**5**)	39(100), 51(70), 55(82), 65(50), 77(75), 91(60), 103(41), 122(18), 131(13), 133(11), 137(10), 147(2), 149(16), 164(28).

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Mamestra brassicae wurde bereits 1970 von Aplin und Birch[5] untersucht. Sie fanden nur eine nicht näher identifizierte Verbindung vom Molekulargewicht 166, die jedoch bei unseren Untersuchungen nicht auftrat. Bei Mamestra persicariae fanden wir neben den bereits angegebenen Verbindungen **1** und **4**[5] noch Phenylacetaldehyd (**3**) und Spuren Benzylalkohol (**2**).
Das Gaschromatogramm der Duftstoffe von Polia tincta, dessen Zusammensetzung dem der beiden Mamestra-Arten ähnelt, unterscheidet sich von dem aller anderen untersuchten Tieren charakteristisch durch das Vorhandensein des Signals der später eluierten Verbindung mit Molekulargewicht 164. Dieser Substanz, die möglicherweise terpenoide Struktur besitzt, muss der blütenartige Geruch der Duftpinsel von Polia tincta zugeschrieben werden.

Rate of sister chromatid exchanges in mammalian cells differing in diploid numbers[1]

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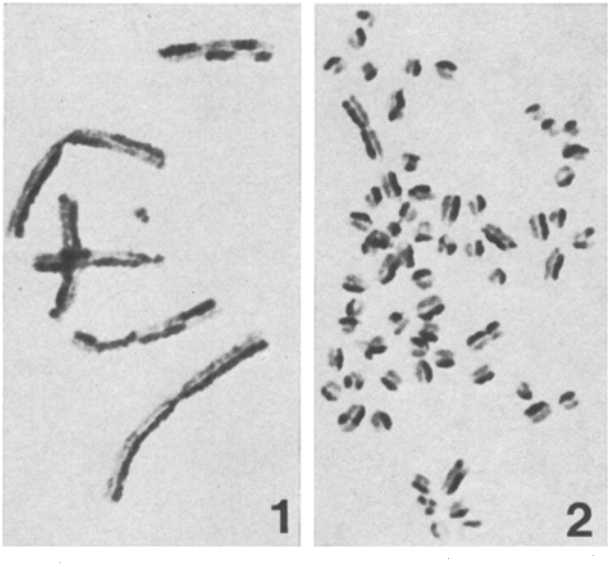
Summary. The rate of sister chromatid exchanges (SCE) under identical experimental conditions is the same in various mammalian species irrespective of their diploid chromosome numbers.

Visualization of sister chromatid exchanges (SCE) by bromodeoxyuridine (BrdU) treatment and Hoechst 33258 fluorescence[3] has been a well-established procedure. Modifications of the procedure for Giemsa staining[4-6] have made it convenient to examine SCE with light microscopy. Investigators have used 3 principle cell materials for the SCE analyses: human (2n = 46), Chinese hamster (2n = 22) and the Indian muntjac (2n = 6,7). It appears that under similar experimental conditions the rate of SCE per metaphase was similar even though the diploid numbers are quite different[7].
We conduced a series of experiments using mammalian cells with diploid numbers ranging from 7 to 70. All cultures were treated with BrdU (10 μg/ml) for 2 cell cycles in the dark at 37 °C. The cells were harvested after a 1-h colcemid (0.05 μg/ml) and the usual hypotonic solution treatments. Air-dried preparations were treated for SCE by either the procedure of Korenberg and Freedlender or Pathak et al.[5,6]. The figures 1 and 2 show sister chromatid exchanges in Indian muntjac (2n = 7♂) and caribou (2n = 70) metaphase plates, respectively.



Figures 1 and 2. Trypsin-treated metaphase spreads showing sister chromatid exchanges after two rounds of BrdU labelling. Fig. 1. Metaphase plate of a male Indian muntjac (2n = 7). Fig. 2. Partial metaphase plate of a male caribou (2n = 70). ×1200.

Frequency of sister chromatid exchanges (SCE) in cultured fibroblasts of various mammalian species after 2 rounds of BrdU replication

Species	2N	Range of SCE	No. of cells	Average SCE/cell	References
Muntiacus muntjac (Indian muntjac)	7♂	5–15	25	8.8	*
Microtus montanus (Montane vole)	22	5–12	25	7.9	*
Cricetulus griseus (Chinese hamster)	22	5–13	25	8.6	*[3,4,17]
Felis nigripes (Black-footed cat)	38	5–15	25	9.4	*
Mus musculus (Swiss mouse)	40	6–17	25	9.8	*[18]
Homo sapiens (human)	46	–	25	9.3	[19–22]
		–	20	8.1	
		–	90	4.2	
		–	50	6.5	
Bos taurus (cattle)	60	5–14	25	7.8	*
Rangifer tarandus (caribou)	70	7–13	25	9.2	*

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