Each of the following three reactions of aromatic diazonium ions is called a Sandmeyer reaction.

```
Ar —— N\(_2^+\)
  \[\text{HCl, CuCl}\]  \[\text{HBr, CuBr}\]
  \[\text{KCN, CuCN}\]
```

Each reaction, overall, is a nucleophilic substitution.

```
Ar —— N\(_2^+\)
  \[\text{Cl}^-\]  \[\text{Br}^-\]
  \[\text{CN}^-\]
```

None of the reactions, however, occurs in the absence of copper (I) ion, which is a reducing agent. The mechanism of Sandmeyer reactions is not fully understood.

**Contributors**

- Gamini Gunawardena from the OChemPal site (Utah Valley University)